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Aer-5123/264
25 OCT 1956

SECOND ENDORSEMENT on NATC PaxRiv Md AAR ser 18-56 concerning A4D-1, BuNo 137816, accident occurring 13 Aug 1956, pilot LONG

From: Chief, Bureau of Aeronautics
To: Chief of Naval Operations (OP-57)
Via: Director, U. S. Naval Aviation Safety Center

Subj: Naval Air Test Center, Patuxent River, Maryland Aircraft Accident Report 18-56; forwarding of

1. Forwarded, concurring with the conclusions and recommendations of the Aircraft Accident Board.

2. An investigation of the fuel control installed on the aircraft involved in this accident by the Wright Aeronautical Division revealed no discrepancies leading to the reported power loss. The fuel control has been shipped to Bendix for disassembly and inspection. Further comments or action, as necessary, on this item will be initiated upon receipt of the results of the investigation being conducted by Bendix.

3. With reference to recommendation (1) of the basic report, increased throttle friction and a positive idle throttle detent will be incorporated by the contractor in all A4D-1 aircraft prior to delivery to the fleet. It should be noted that the above throttle difficulties had been under investigation by the Bureau of Aeronautics and the Douglas Aircraft Company prior to this accident.

4. The installation of a manual emergency stores jettisoning system, as mentioned in recommendation (2) of the basic report, is not considered practicable in that a redesign of the Aero 7A and 20A racks would be involved. The routing of cables through the pressurized cockpit and through the wing panel fuel cells to effect a manual system installation would be both difficult and extensive. Also, the effects of temperature changes and vibrational forces would tend to reduce the reliability of such a system. In lieu of the above, it is considered that an emergency release system incorporating a "one-shot" battery would be more appropriate. In order to further evaluate the need for a manual system, the Bureau of Aeronautics has requested the contractor to submit recommendations for an emergency stores jettisoning system.

1

[redacted]

By direction

PAXRIV
FUNDO

FTO1
A25/1, AMD
Ser 292
18 SEP 56

FIRST ENDORSEMENT on NATC PaxRiv Md AAR ser 18-56 concerning AMD-1, BuNo. 137816, accident occurring 13 Aug 1956, pilot LONG

From: Commander, Naval Air Test Center, Patuxent River, Md.
To: Chief of Naval Operations (OP-57)
Via: (1) Chief, Bureau of Aeronautics
(2) Director, U. S. Naval Aviation Safety Center
Norfolk, Va.

Subj: Naval Air Test Center, Patuxent River, Maryland Aircraft Accident Report 18-56; forwarding of

1. Forwarded concurring with the conclusions and recommendations of the Aircraft Accident Board.

C. H. Duerfeldt
C. H. DUERFELDT

Copy to:
NAVAVSAFCEN, NorVa
BAR, El Segundo
BAR, Woodridge

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AIRCRAFT ACCIDENT REPORT
OPNAV FORM 3750-1 (REV. 11-55)
PAGE 1

See Instructions for completion prior to filling out

OPNAV REPORT 3750-1

PART I - GENERAL

SECTION A - IDENTIFICATION

1. AIRCRAFT ACCIDENT BOARD CONVENED BY: Naval Air Test Center, PaxRiv, Md.
2. DATE OF ACCIDENT: 13 Aug 1956 TIME: 1001EDT
3. AIR SERIAL NUMBER: 18-56
4. TO: CHIEF OF NAVAL OPERATIONS (Op-57)
5. ENCLOSURES: (1) CAPT (b) (6) Statement
(2) M/Sgt (b) (6) Statement
(3) (b) (6) AD3 Statement
(4) (b) (6) MEC, Statement
(5) (b) (6) BM2, Statement
(6) A/C Crash & Accident Report
(7) LT (b) (6) Statement
(8) CDR (b) (6) Statement
(9) CDR Statement
6. VIA: (1) Chief, BuAer (Aer-512)
(2) Director, NavAvSafCen
(3)
(4)
(5)
(6)
(LAST) DIRECTOR, U.S. NAVAL AVIATION SAFETY CENTER
7. REPORTING CUSTODIAL (if different than item number 1.): Flight Test Division NATC, Patuxent River, Maryland
8. ACTIVITY OPERATING AIRCRAFT (if different than item 7): Same
9. KIND OF FLIGHT: 1K
10. TIME OF DAY: [ ] DAWN [X] DAY [ ] DUSK [ ] NIGHT
11. LOCATION OF ACCIDENT: In river 600 yds off end of runway 13 NAS PaxRiv
12. ELEVATION ABOVE SEA LEVEL: 0
13. PLACE OF LAST TAKE-OFF: NAS Patuxent River, Maryland
14. CLEARED FROM NAS PaxRiv, Md. TO NAS PaxRiv, Md.
15. TYPE CLEARANCE: [ ] IFR [X] VFR [X] LOCAL [ ] OPERATIONAL [ ] AIRWAYS [ ] DIRECT [ ] OTHER (Specify)

AIRCRAFT

16. TIME IN FLIGHT: 00+25
17. TYPE ACCIDENT: B-7
18. PHASE OF FLIGHT: 7
19. MODEL: A4D-1
20. SERIAL NUMBER: 137816
21. DAMAGE TO AIRCRAFT: [X] A [ ] B [ ] C [ ] D
22. DOLLAR COST: $628,000.
23. AIRSPEED (kts): Est 100-120
24. A/C WEIGHT: Est 15,250
25. LIST MODEL, SER. NOS. REPORTING CUSTODIAN AND DAMAGE CLASSIFICATION OF ANY OTHER A/C INVOLVED (complete separate OPNAV form 3750-1 for each A/C)

SECTION B - PERSONNEL INFORMATION

PILOT AND CO-PILOT

1. PERSONNEL	2. NAME (last, first and middle initial)	3. RANK/RATE	4. FILE/SERV. NO.	5. DESIGNATOR	6. DATE DESIGNATED	7. DATE OF BIRTH	AGE
PILOT (Person at controls at time of accident)	LONG, John O.	LT	(b) (6)		4/17/45	6/18/22	34
CO-PILOT							

8. PERSONNEL	9. OPERATIONAL FLIGHT TRAINER AVAILABLE?	USED?	10. UNIT TO WHICH ATTACHED	11. TYPE INSTRUMENT CARD
PILOT	[ ] YES [X] NO	[ ] YES [X] NO	Flight Test Division NATC Patuxent River, Md.	[X] STANDARD [ ] SPECIAL
CO-PILOT	[ ] YES [ ] NO	[ ] YES [ ] NO		[ ] STANDARD [ ] SPECIAL

12. PILOT, CO-PILOT, STUDENT EXPERIENCE

TOTAL PILOT HOURS

ITEM	PILOT	CO-PILOT	STUDENT
ALL MODELS	4535.9	Since Nov 57 1.1	-
ALL MODELS IN LAST 12 MONTHS	171.2	31.2	-
ALL MODELS IN LAST 3 MONTHS	70.1	21.1	-
ALL SERIES THIS MODEL	22.4	-	-
ALL SERIES THIS MODEL, LAST 12 MONTHS	22.4	-	-
ALL SERIES THIS MODEL, LAST 3 MONTHS	21.2	-	-

ITEM	PILOT	CO-PILOT	STUDENT
CV LANDINGS DAY/NIGHT	125/0	-	-
FCLP LANDINGS DAY/NIGHT	460/5	-	-
INSTRUMENT HOURS, LAST 3 MONTHS	28.2	-	-
NIGHT HOURS, LAST 3 MONTHS	14.6	8.5	-
(jet accidents only) TOTAL JET PILOT HOURS	Since Nov 52 322.6		
DATE LAST FLIGHT, ALL SERIES THIS MODEL	8/10/56		
DURATION LAST FLIGHT, ALL SERIES THIS MODEL	2.0		

13. ALL PERSONNEL

NAME (last, first and middle initial)	RANK/RATE	FILE/SERVICE NO.	ORG. TO WHICH ATTACHED	INJURY CODE	BILLET	POSITION
1. LONG, John O.	LT	(b) (6)	Flight Test NATC A		Pilot	Center Cockpit
2.						
3.						
4.						
5.						

(If additional space is necessary, attach additional sheet(s))

OPNAV FORM 3750-1 (REV. 11-55)
PAGE 2

AIRCRAFT ACCIDENT REPORT

OPNAV REPORT 3750-1

SECTION C - WEATHER

1. CEILING	2. VISIBILITY	3. WIND DIRECTION AND VELOCITY	4. TEMPERATURE	OUTSIDE AIR RUNWAY	5. DEW POINT	6. ALTIMETER SETTINGS
200-0	8	S 4	84°F		72°F	30.03

7. OTHER WEATHER CONDITIONS (Winds aloft, icing levels, state of sea, etc., if pertinent to accident)

SECTION D - CAUSE FACTORS

1° = Primary Factor
1s = Secondary Factor

ITEM	P	S	ITEM	P	S	ITEM	P	S
PILOT ERROR			LANDING SIGNAL OFFICER ERROR			MATERIAL FAILURE OR MALFUNCTION		
CREW ERROR			OTHER PERSONNEL ERROR, Specify.....			MATERIAL INADEQUACY		
SUPERVISORY PERSONNEL ERROR			ADMINISTRATIVE ERROR			ROLLING AND PITCHING DECK/ROUGH SEAS		
MAINTENANCE PERSONNEL ERROR			AIRPORT OR CARRIER FACILITIES			UNDETERMINED		X
SERVICING PERSONNEL ERROR			WEATHER			OTHER, Specify.....		

SECTION E - DEPLOYMENT

FOR ACCIDENTS ABOARD DEPLOYED CARRIERS (Complete following Section on Pilot.)

1. DATE DEPLOYED	2. DAY - HOURS/LANDINGS LOGGED SINCE DEPLOYED	3. DAY - HOURS/LANDINGS LOGGED LAST 30 DAYS
4. INSTRUMENT HRS. LOGGED SINCE DEPLOYMENT	5. NIGHT - HOURS/LANDINGS LOGGED SINCE DEPLOYED	6. NIGHT - HOURS/LANDINGS LOGGED LAST 30 DAYS

PART II - MAINTENANCE, MATERIAL AND FACILITIES DATA

SECTION A - AIRCRAFT AND ENGINE DATA

1. AIRCRAFT HISTORY

DATE OF MANUFACTURE	SERVICE TOUR	MONTHS IN THIS TOUR	TOTAL NO. OF OVERHAULS	FLIGHT HRS. SINCE LAST OVERHAUL	FLIGHT HRS. SINCE ACCEPTANCE	TYPE CHECK LAST PERFORMED	FLIGHT HRS. SINCE LAST CHECK	NO. OF DAYS SINCE LAST CHECK
12/24/55	1	17	0	0	212.0	2nd Major	20.7	7

2. ENGINE HISTORY

	ENGINE MODEL	SERIAL NO. OF ENGINE					
NO. 1	J65-W16	611002	0	0	114.3	A	20.7	7
NO. 2								
NO. 3								
NO. 4								

3. GENERAL

a. DID FIRE OCCUR: ☐ BEFORE ACCIDENT ☐ AFTER ACCIDENT ☒ DID NOT OCCUR

b. DID EXPLOSION OCCUR IN FLIGHT? ☐ YES ☒ NO

c. CHECK IF APPLICABLE ☐ AMP FOR SERIAL

d. HAS DIR BEEN REQUESTED? ☐ YES ☐ NO

e. FAILED COMPONENTS INVOLVED

4. A/C MAINT. AND ENG. FACTORS

CHECK BELOW ITEMS PRESENT IN THIS ACCIDENT

a. ☐ AIRCRAFT DESIGN
b. ☐ AIRCRAFT EQUIPMENT
c. ☐ MAINTENANCE
d. ☒ UNDETERMINED
e. ☐ TECHNICAL INSTRUCTION
f. ☐ OTHER, Specify.....
g. ☐ SURFACE FACILITIES
h. ☐ HUMAN ENGINEERING (e.g. cockpit configurations)

5. MISCELLANEOUS DATA

a. ALTITUDE AT MALFUNCTION	b. AIR SPEED	c. OPERATING TEMPERATURE	d. WEIGHT OF AIRCRAFT	e. C.G. (% MAC)	f. KIND OF FUEL	g. FUEL PRESSURE
1000 ft	Est 150		15,250		-	

h. EVIDENCE OF FUEL CONTAMINATION

i. CAUSE OF ENGINE FAILURE OR FLAMEOUT: Undetermined

j. FUEL CONTROL REGULATOR/CARBURETOR (List Stock and Ser. nos., give time since new or overhauled

k. EXTERNAL STORES ABOARD A/C: 2-150 gal external tanks

(If additional space is necessary, attach additional sheet(s))

AIRCRAFT ACCIDENT REPORT

PART II - MAINTENANCE, MATERIAL AND FACILITIES DATA (Cont'd)

SECTION B - FACILITIES DATA

1. GENERAL (CHECK BASIC FACILITIES INVOLVED; DESCRIBE EFFECT ON ACCIDENT IN THE ANALYSIS SECTION)

a. ☐	CLEARANCE AUTHORITY	h. ☐	RUNWAY	o. ☐	EMERGENCY ARRESTING GEAR (Runway)
b. ☐	FLIGHT PLANNING INFORMATION SOURCE	i. ☐	WATER LANDING AREA	p. ☐	AIRCRAFT SERVICING, HANDLING AND DIRECTING (Field or Ship)
c. ☐	LANDING AIDS (GCA, CCA, ILS, etc)	j. ☐	APPROACH ZONE	q. ☐	CRASH AND RESCUE
d. ☐	TRAFFIC CONTROL TOWER (Field or Ship)	k. ☐	END ZONE	r. ☐	SEARCH AND RESCUE
e. ☐	APPROACH AND ENROUTE AIDS TO NAVIGATION	l. ☐	SHOULDERS	s. ☐	CATAPULT
f. ☐	RUNWAY WATCH	m. ☐	TAXIWAY	t. ☐	ARRESTING GEAR (Carrier)
g. ☐	LANDING SIGNAL OFFICER	n. ☐	PARKING AREA	u. ☐	BARRIER OR BARRICADE (Field or Ship)
w. ☐	OTHER (Specify)			v. ☐	FLIGHT DECK

2. SHIPS DATA

a. EQUIPMENT INVOLVED: ☐ CATAPULT ☐ ARRESTING GEAR | b. PRESSURE SETTINGS | c. WIND OVER DECK | d. RELATIVE HEADWIND | e. APPROACH SPEED (SPN-12 READING)

f. MARK NUMBER | g. MODEL NUMBER | h. LOCATION ON SHIP | i. LAUNCHING BRIDLE AND CONFIGURATION USED

j. CATAPULT/ARRESTING GEAR BULLETINS OR NOMOGRAMS USED

k. This portion shall be completed whenever (1) a major aircraft accident involves arresting gear, barrier and/or barricade equipment, or (2) an aircraft accident involves malfunctioning of arresting gear, barrier and/or barricade equipment. Minor accidents or routine damage to cables, weldings and other expendable components need not be reported.

ENGAGED	DECK RUNOUT (FT.)	RAM TRAVEL (IN.)	CONTROL VALVE SETTINGS: CONSTANT PRESSURE DOME (P.S.I.)	CONSTANT PRESSURE RATIO	CONSTANT RUN-OUT (WT. LBS.)	ACCUMULATOR PRESSURE (PSI)	COMMENTS (for cable failure specify number of landings and months in service)
DECK PENDANT							
DECK PENDANT							5
BARRIER							
BARRIER							
BARRICADE							

PART	SECTION	ITEM	PART III REMARKS (continue on separate pages if necessary)
Encl:		(10)	Medical Officers Report
		(11)	MAJ. (b) (6) Statement
		(12)	LCDR Statement
		(13)	(b) (6) AN, Statement
		(14)	Mr. (b) (6) 's Statement
		(15)	Mr. Statement
		(16)	(b) (6) , AD3, Statement
		(17)	Mr. (b) (6) Statement
		(18)	Photographs (28 figures)
		(19)	Crash Location Chart

PART IV - SIGNATURES (INDICATE DATE SUBMITTED TO C.O.)

(b) (6) Opers Off. F.T. Div. CDR, USN UNIT BILLET

(b) (6) LCDR, USN Project Pilot UNIT BILLET

(b) (6) (MC), CDR, USN (Flight Surgeon member)

(b) (6) LT, USN (member) Project Pilot UNIT BILLET

V The Accident

LT LONG departed the Flight Test line in A4D-1 BuNo 137816 at approximately 0930 EDT on 13 August 1956 for a 2.5 hour familiarization flight. A proper radio check was made with Flight Test Base Radio prior to leaving the line. He took off on runway 9, NAS Patuxent River, Md. at approximately 0935 EDT. At about 0958 EDT, the pilot called the tower that he was approaching the break for runway 9 and was cleared to break. He was observed to enter the break with landing gear down and drop tanks aboard at a normal speed for this configuration and at an estimated 1500 ft. altitude. The airplane was further observed on the downwind leg in a position to turn base leg for runway 9 and at about 1000 ft. of altitude. The airplane then commenced a wings nearly level, slightly nose high descent at a steep angle. It turned about 50°-60° to the left during the descent and struck the water in a wings level, nose high attitude with a high sink rate about 600 yds from the approach end to runway 13. The airplane hit, bounced once then sank almost immediately. Rescue operations started within 30 seconds as a helicopter was airborne about 200 yds from the point of impact.

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VI Damage to Aircraft

The aircraft sustained strike damage on impact with the water.

The lower portion of the after fuselage section and the extended main landing gear apparently struck the water first adding pitching velocity to the forward portion of the aircraft in addition to the high sinking velocity.

Major structural components and areas received the following damage:

Aft fuselage area - extensive impact damage along the lower surface from the tail disconnect station to the end of the airplane. Relatively little damage to the topside and horizontal tails surfaces or the upper fuselage.

Center fuselage area - extensive impact damage along entire lower surface. The engine was visible throughout this lower area. This section was held to the after fuselage section only by control cables and hydraulic lines. All normal connection fittings had failed.

Landing gear - the main landing gear structure and nose wheel structure failed very near the attachment points and were folded under the airplane and held in place by various hydraulic lines, fittings and bent pieces of airplane skin structure.

Wing area - the wing center section was separated in the middle, the main spar was broken and the wings ripped away from the fuselage attaching points. The left and right sections were held together by miscellaneous fuel and hydraulic lines and one steel spar cap about one inch by ¼ inch. The drop tanks were ripped off and split into many pieces. The underside of the wing was ripped and torn in several spots. The landing flaps pulled completely off of the starboard wing and were nearly off of the port wing.

Nose and cockpit area - the nose section up to the first bulkhead was completely torn off. From this point aft the left and right hand sides with consoles, separated laterally exposing the entire cockpit. Although the pilot's seat remained attached to the aircraft the bottom of the seat was completely ripped out.

The engine - suffered impact damage to the lower compressor case and at several other points on the exterior. The rotors and stators showed damage as a result of foreign objects entering the compressor. The rotors and stators were bowed and the interior of the lower compressor case was damaged as a result of the compressor case being forced upward and the rotor shifting forward on impact. The second stage turbine blades were bowed as a result of the shroud ring being forced upward on impact and impinging on the blades. The case of the fuel control was cracked on impact. All lines and fittings were severed either on impact or when the engine fell from the plane to the river bottom during salvage operations.

VII The Investigation

With the assistance of Mr. (b) (6) of Douglas Aircraft Company, Mr. (b) (6) of Wright Aero Division and LCDR (b) (6) of the Naval Safety Center, the Accident Board made a thorough investigation of the wreckage in an effort to determine the cause of the accident. The main body of the aircraft and engine were recovered in approximately five hours. Diving operations were continued for two days and almost all parts of the aircraft were recovered.

The Board was divided into two groups - one group examined the airframe and systems, the other group examined the engine and associated components.

Statements of qualified observers who witnessed the flight path prior to the crash indicate a sudden loss of power while the plane was on the downwind leg of the traffic pattern.

The fuel system was examined and all fuel lines not destroyed by the impact both fluid carrying and vent, were

examined for blockage and found clear. The fuel shut-off valve was found in a semi-open position, but examination of the linkage to this valve indicated that it was forced to this position on impact. The control itself was in the fuel "on" position. The fuel transfer pump, the fuel boost pump, and engine driven pump were examined for possible malfunction. The transfer pump and the boost pump were functionally checked and were in operating condition. Investigation of the fuel transfer pump indicated no rotation on impact. The fuel tank guage was jammed at 4600 lb. Examination of the guage face under black light to determine a possibly different reading at time of impact gave negative results. The fuel transfer shut-off switch (a test rig) was found in the "off" position when the airplane was recovered. The fuel transfer warning system functioned properly when checked. The fuel probe was returned to Douglas for examination and was found to function properly.

The hydraulic system was examined and all components of this system with the exception of the fluid carrying lines were intact on recovery. It was determined that the flaps were down, the landing gear was down and locked, the speed brakes were closed, and the hydraulic portion of the flight control system engaged at the time of impact. The aileron control valve and the elevator control valve were examined and found to be in workable condition. The longitudinal trim actuator was functionally checked and found to be in operating condition.

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The engine was disassembled and jointly examined by Navy personnel, Wright Aeronautical representatives, and Bendix representatives. The investigation reveled the following:

1. Front Main Bearing Support

(a) Starter adapter was damaged when alternator drive assembly was torn loose during impact.

(b) Foreign matter, which was confirmed to be a mud sediment by laboratory analysis, was found to be present on inner cavity surfaces.

(c) The front main bearing suffered no impact damage and was in good condition.

(d) The front main bearing support and minor components with the exception of item (a) suffered no damage.

2. Center Main Bearing Support

(a) The center main bearing support and its minor components did not suffer any apparent damage as a result of the crash.

(b) The center main bearing was lightly contaminated with mud and was in initial stages of corrosion but did not display any evidence of distress. It was apparent that the bearing had been lubricated properly prior to the incident.

3. Rear Main Bearing

(a) The rear main bearing was lightly contaminated with mud and was in initial stages of corrosion, however, there was no evidence of bearing distress. It was apparent that the bearing had been lubricated properly prior to the incident.

4. Engine Gear Boxes and Lubrication System

(a) The component gear boxes and shafts were found to be in an operable condition and displayed no evidence of malfunction or rotational impact damage.

(b) Mud sediment deposits contaminated all components within the lubrication system.

(c) All components displayed evidence of proper lubrication and exhibited no areas of distress.

(d) The oil pump, modified to NEB 107, appeared to have been in an operable condition. Contamination by salt water, mud and fuel resulted in corrosion of inner cavity surfaces after exposure to atmosphere.

(e) It was evident that oil lines and passages within the oil system contained oil at the time of impact.

(f) Although a considerable amount of water was present in the oil tank, the quantity of oil within the tank and oil system was considered adequate for propr lubrication.

5. Compressor

(a) The compressor housing was intact although an impact puncture was found in the area adjacent to the primer solenoid.

(b) The compressor rotor was lightly damaged in all stages as a result of the crash impact.

(c) The appearance of the compressor was indicative of a very low RPM as evidenced by:

(1) Very slight or no bowing of rotor blades opposite to the direction of rotation.

(2) The major part of compressor blade damage occurring as a result of axial interference.

(3) No gouging of the upper compressor housing as compared to gouging of the lower housing at the 5 - 7 o'clock position.

(4) Limited damage to the inlet guide vanes and compressor rotor first stage blades from impact debris.

6. Hot Section

(a) The combustion chamber inlet housing suffered impact damage at the 6 o'clock position which resulted in:

(1) A 20 inch opening along the weld which joins the front attaching flange to the housing body.

(2) Breaking away of the burner support strut locating block at the 6 o'clock position.

(b) The combustion chamber outer housing suffered a large impact dent at the bottom which protruded into the outer liner and dented it also.

(c) There was no evidence of combustion products or heat discoloration near any of the combustion chamber damage noted above, thereby supporting the conclusion that the engine was not operating at time of impact.

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(d) The second turbine stator shroud suffered an impact dent at the 6 o'clock position which resulted in various degrees of tip damage to the second stage rotor blades. The first stage rotor was not damaged by the crash. The condition of the turbine supports the conclusion that the engine was not operating at time of impact.

(e) There was no evidence of overheating, abnormal combustion, metallization or other discrepancies within the hot section which would indicate improper functioning of the engine.

7. Fuel System

(a) All filtering elements and lines within the fuel system were found to be clean with the exception of light mud deposits.

(b) Fuel Pump - The pump was disassembled and inspection revealed that it was in satisfactory condition. The inlet line from the airframe to the pump was severed during impact at the pump which allowed water and mud to enter the system at this point.

(c) Fuel Distributors - The No. 4 and No. 5 position distributors were broken loose during impact. The fuel lines at these locations were crushed; however, the lines from the other distributors to the fuel tubes contained fuel and water. It should be noted that the presence of fuel does not confirm that the engine was receiving fuel.

(d) Fuel Control - The control suffered minor impact damage to:

(1) the compressor pressure limiter assembly which was cracked at the mounting flanges,

(2) two external solenoids.

The control was found to contain some fuel and water on initial investigation, but no estimate of fuel quantity present in the control at time of impact could be made because of the cracked assembly. The control was returned to Curtis-Wright and the damaged components noted above were replaced with like servicable items. The results of the testing indicated no malfunctioning of the control under any of the variables (maximum flow, minimum flow, acceleration-deceleration, adjustment and correct functioning of altitude and temperature compensation devices) that might have been conducive to engine flame-out.

(e) The throttle was found in the idle cut-off position when the airplane was recovered. The position is not necessarily indicative of the position during flight as the manner in which the wreckage parted could easily have moved it to this position. The throttle linkage on the fuel control was found indicating 20° above "idle", however, the case had been cracked and this position is not necessarily indicative of the position during flight.

The autopsy examination revealed no evidence which would indicate that the pilot was overcome by carbon monoxide or that he suffered hypoxia (or anoxia).

VIII The Analysis

Examination of the airplane and statements of witnesses definitely show that the airplane lost power while in the traffic pattern and that the engine was rotating at a very low RPM on impact.

Examination of the airplane revealed no mechanical reason for the accident.

Examination of the pilot revealed no medical reason for the accident.

The Board must assume that some malfunction caused the pilot to terminate the flight sooner than expected and further that whatever the reason it was of such a minor nature that the pilot did not inform the tower or cause him to make other than a normal entry to the pattern.

As no tangible evidence was found which could be labeled the prime cause factor the Board was forced to look for the most probable cause factors using the known facts. The outstanding fact of the investigation is that the engine was definitely not producing thrust at the time of impact and probably for a short period preceding impact. Therefore, the Board considers that there are two possible causes for the engine failure although in each case several reasons tend to refute the possibility.

The first possible cause is inadvertent placement of the throttle in the idle cut-off position. The reasons for such a cause are:

(1) a known condition of low throttle friction.

(2) a non-positive idle throttle stop

(3) a weak spring arrangement designed to hold the throttle inboard and prevent its passing the idle throttle stop.

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The reaons against such a possibility are:

(1) The confirguration and speed of the airplane at the "break" (wheels down, est. speed under 200 kts, heavy gross weight) point toward at least a moderate throttle setting with no reason to reduce throttle to the idle position.

(2) The pilot was well aware of the low friction, condition of the throttle stop and weak spring arrangement.

The second possible cause is flameout due to fuel exhaustion as result of mismanagement of the transfer system. The reasons for such a possibility are:

(1) The duration of the flight corresponds to the amount of fuel available in the sump tank.

(2) The transfer switch was found in the off position.

The reasons against such a possibility are:

(a) A red warning light located in the center of the instrument panel would glow any time the transfer switch

was off. The actuating pressure switch and the light both functioned properly following the accident.

(b) The fuel guage functions in such a manner that the guage shows total internal fuel remaining unless the level in the fuselage tank drops below 1100 lb. as would be the case if the transfer switch were off, the guage then drops out the wing fuel reading and shows fuselage tank fuel only. The fuel probe which actuates the guage in the above described manner functioned properly following the accident.

(c) A mixture of fuel and salt water were found in the sump tank following the accident, indicating the fuel was present in the fuselage tank prior to impact.

(d) The pilot was well aware of the function of the fuel transfer switch and of the meanings of the indications described above.

The Board notes the following item of airplane design which may have prevented a successful ditching. Electrical power is required to jettison external tanks by the normal or so called emergency method, thus preventing the pilot from reducing the airplanes gross weight in an emergency. Therefore, if engine RPM falls below gonerator drop out speed the pilot must extend the emergency generator and let it come up to speed before being able to jettison the external tanks.

IX Conclusions and Recommendations

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It is concluded that:

(1) The primary cause factor is complete power loss.

(2) The reason for such power loss is undetermined.

It is recommended that:

(1) The throttle quandrant be redesigned to provide greater friction and a positive idle stop.

(2) A manual emergency stores jettisoning system be provided in order that pilots may jettison external stores regardless of electrical power.

STATEMENT OF CAPT [redacted] USA

At approximately 1000 hours EDT, 13 August 1956, I was returning from a project flight to the Flight Test helicopter ramp in an HUL-1 helicopter BuNo 142369. There were two helicopter crewmen riding in the helicopter with me, M/Sgt [redacted] USMC, and [redacted] AD3, USN. I was flying east of, and parallel to, runway 31 at an altitude of approximately 75 feet when I first saw the A4D slightly to my right and at approximately the same altitude. At that time I noted that the landing gear of the A4D was down, speed was relatively slow, with a high angle of attack. The attitude was very similar to that used in FCLP's, and I assumed momentarily that this aircraft was engaged in field carrier landing practice on runway 13 although I wondered why the pilot was practicing on a closed runway. I did not see any smoke coming from the tailpipe or any other part of the aircraft. I did not note whether dive brakes or flaps were down. Aircraft heading was perpendicular to runway 13-31, estimated to be 220° magnetic. No attempt to turn from this heading was noted, and the aircraft contacted the water in the attitude stated above approximately 150 yards off shore from the approach end of runway 13. I saw some small unidentifiable pieces of the aircraft fly into the air upon contact with the water, and it immediately sank. I immediately flew to the scene, trying all the while to contact the tower on channel 1, but received no immediate response. There was a large surface area covered with fuel, with a few pieces of the aircraft floating. A helmet came to the surface, along with what appeared at the time to be the pilot. The helicopter I was flying was not equipped with a hoist, so I hovered over the scene, and the two crewmen jumped overboard. I contacted LT [redacted] who was flying in the immediate area in an HOK-1 helicopter equipped with hoist. While talking to LT [redacted] the tower answered and I informed the tower of the crash. Shortly thereafter the HOK, crash boat, and a UF arrived on the scene, and assuring myself that I could be of no further assistance I departed, landing at the Flight Test helicopter ramp at 1010 EDT.

[redacted]

[redacted] CAPT, USA

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Enclosure (1)

STATEMENT OF (b) (6) M/SGT, (b) (6) USMC

At approximately 1000 on 13 August 1956, I was a crew member on HUL helicopter BuNo 142369 piloted by CAPT (b) (6) USA. We were flying north and parallel with runway 13. Our position was approximately 600 hds from the north end of the runway when I just sighted an A4D-1 about 200 yds off the end of the runway and flying in a south westerly direction. The aircraft had about 60 ft to 70 ft of altitude in an FCLP type attitude with landing gear and flaps down and losing altitude fast. There appeared to be no tailpipe smoke when suddenly the aircraft nosed over sharply and struck the water in a steep nose down attitude and then porpoised back to the surface sending up a large spray of water and debris, then sank immediately. CAPT (b) (6) piloted our helicopter over the area at once and we sighted the pilot's helmet but could not tell whether or not he was wearing it because the water was so stirred up. I removed my helmet and shoes and jumped about 20 ft into the water near the helmet. But the helmet was not attached to the pilot, about 10 yds away I located the life raft and it was not attached to the pilot. Then I tried to dive down three or four times to locate the wreckage but could not get deep enough. By this time, the JP fuel and fumes were burning my body and blurring my eyes beyond good vision. I was in the water approximately 20 to 25 minutes when a boat from Flight Test picked me up.

(b) (6)

M/SGT, USMC

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Enclosure (2)

STATEMENT OF (b) (6) AD3, USN

On the morning of 13 August 1956, I was a crew member aboard HUL BuNo 142369 piloted by CAPT (b) (6), USA. At approximately 1000 EDT, flying parallel to runway 31, it was related to me that an A4D-1 had crashed about 100 yds off shore in the bay. The pilot of the HUL moved into the area at the same time the other crew member, (b) (6) M/Sgt, USMC and I started discarding clothing getting ready for an attempted rescue of the downed pilot. On the first pass of the HUL, Mayer jumped approximately 20 feet into the water and on the second pass I jumped 75 to 100 feet from him. Due to debris and JP fuel, it was difficult to see under water. What appeared to be a parachute and helmet were located but were not attached to the pilot. After remaining in the water approximately 20 to 25 minutes, I was picked up by a crash boat and transferred to a Flight Test boat which brought us back to the hangar area.

(b) (6)

(b) (6) AD3, USN

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Enclosure (3)

20 August 1956

STATEMENT OF (b) (6) MEC, USN, DIVER FIRST CLASS, CONCERNING AIRCRAFT CRASH ON 13 AUGUST 1956:

I decended approximately 1130 13 August 1956 to search for sunken aircraft, found same about fifteen minutes later.

I was instructed by (b) (6) EMC, USN, Master Diver to look for body of pilot first, which I did. The aircraft as I seen it to be appeared to be upside down, Stbd side lower in mud (upside down it would be port side down). I attached my hand line to the Stbd wing, and proceeded to fuselage, I started aft & when I reached the tail section, turned and started foward. (Visibility was bad because of mud bottom) I reached just fwd of wings and found that the aircraft was badly torn and wrecked, everything seemed to angle upwards (wiring & jagged metal badly mangled) atop of all this I located body of pilot in a sitting position all strapped in. (Helmet missing) I unlatched three buckles holding him and parachute pack together, also light colored strap seemed to lead back into wreckage which was also holding body to wreckage. I unbuckled two front straps high on chest of pilot also unbuckled strap on Stbd side of pilot. Secured pilot around chest under arms with securing line & rode to surface with body. Pilots right leg was tangled in wreckage, but not to the extent that he could not free it if he was conceous and unstraped. Body was about 20' under surface of water atop of fwd fuselage wreckage.

(b) (6)
MEC. USN.
USN.

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Enclosure (4)

2 August 1956

STATEMENT OF (b) (6) BM2, DIVER FIRST CLASS, CONCERNING AIRCRAFT CRASH ON 13 AUGUST 1956:

While working for (b) (6) BMC, Master Diver, USN, I decended at approximately 1125 to search for wrecked aircraft. Approximately 15 to 20 minutes later I located aircraft and secured my line to the tail section, then proceeded forward along the fuselage to the Port wing (which was on my right) the plane being upside down, I drew my conclusion of it being upside down by the word - "NAVY" - stenciled on the fuselage which was inverted. I explored the Port wing (Stb. wing) which seemed to be intact with very little or no damage, I then retraced myself back to the fuselage and with the intention of proceeding as far forward as possible, but just about at the forward part of the wing, the plane was broken off or what appeared so. At this point I wnt back to the surface, to inform the diver in charge, and to get further instructions, at this time divers were changed and I gave (b) (6) BMC, USN, MASTER DIVER, my report.

Later I was sent back down with, (b) (6) as a diving partner, our duty was to secure recovery wires to the plane for hoisting. We secured one wire to the tail hook (arresting gear) and another around the fuselage, the hoising was done by the wire secured to the tail hook, the other wire was primarely as a safety measure. Most of the plane came up with the first hoist but the engine fell out and was recovered a few minutes later.

(b) (6)

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Enclosure (5)

AIRCRAFT CRASH AND ACCIDENT REPO

PRNC-NATC-901

CONTROL TOWER

DATE	TIME	UNIT
13 August 1956	0903 EST	FLIGHT TEST
TYPE	**BUNO**	**PILOT**
A4D	137816	LT. J. O. LONG

LOCATION OF ACCIDENT

C-7 Station Crash Grid/ in the water approximately 1000 feet Off approach end runway 13

DISTANCE TO SCENE: Approx. 3600 ft from Operations	SERVICE RUNWAY: 9
SKY CONDITION: 20,000 thin scattered	VISIBILITY: 8 miles
WIND DIRECTION: Southeast	WIND VELOCITY: 4 knots
TEMPERATURE: 84.0°F	DEW POINT: 72.1°F
RELATIVE HUMIDITY: 68%	TIME OF ALARM: 0910EST

Give clear and concise description of accident and tower statment.

FLORIDA 816 A4D called tower in the slot for R/W 9, tower cleared FLORIDA 816 to break call on base leg. No other transmissions were received from 816. As controller I watched 816 as he was passing over the EM Beach at about 900 feet with his gear in the down position. I then turned my attention to traffic on the field for about 20 seconds, looking again at the base leg position, I lost sight of 816 however I did sight a sizeable distrubance in the water and called it to the attention to another controller at the same time the water smoothed out and I sighted the red painted tail submerging. An HUL helicopter operating just past the intersection of R/W 20 & 13 spotted the crash and proceeded without instruction from the tower to the scene and was over the scene within seconds, he had no hoist gear aboard, however, two crewman aboard did jump out of (over)

OTHER PERSONNEL IN TOWER

(b) (6) ACC

(b) (6) ACAN

ADC

(b) (6) AC2

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#1 (250.6 mcs)	TRACK NUMBER: 0602
(b) (6)	RANK OR RATE: AC1

Enclosure (6)

the HUL into the water. At the same time there was a crash boat and a UF (TEAKETTLE 933) operating in the PAXRIV Seadrome who also sped to the scene and arrived within two minutes after the crash. An HOK without hoist gear appeared on the scene.

TO WHOM IT MAY CONCERN

On 13 August 1956 I was the Operations Duty Officer at NAS Patuxent River. At approximately 0900 I was standing on the steps at the Operations Building, facing the parking lot, when I observed an A4D with Orange markings descending at approximately a 35 degree angle. I immediately headed for the crash phone to alert the Boat House and other activities involved. While proceeding into the building I saw the aircraft disappear behind the bluff at the approach end of runway 13 and the ensueing splash. I did not note, particularly if the gear was up or down. The attitude of the aircraft until it disappeared from view appeared flat.

(b) (6) [redacted]

LT USN

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Enclosure (7)

STATEMENT OF WITNESS TO CRASH OF A4D-1 ON 13 AUGUST 1956

I was the pilot of an F2H-2 taxiing for take-off at about 1000 on 13 August. The duty runway was 9, and I had been cleared to taxi from the diagonal taxiway down the duty runway to the take-off position. As I started down the duty runway I saw an A4D with tanks on enter the breakup slot for runway 9. The airplane had the landing gear down as it entered the breakup slot, and appeared to be at the normal landing gear down speed. I did not notice if the landing flaps were down. The A4D was cleared to break by the tower. Since I was still taxiing on the duty runway I watched the A4D as it turned downwind. It appeared to be squared away on the downwind leg for runway 9, with at least 1,000 feet of altitude. Shortly thereafter, the A4D began an abrupt descent at an angle estimated at 40° - 45°. There was no apparent change in airplane attitude or course during the descent and the airplane remained in approximately a level attitude. The drop tanks were not jettisoned and no radio transmissions were heard from the A4D. Shortly before the airplane disappeared from sight I advised the tower to check the A4D downwind.

(b) (6)

[redacted]

CDR, USN

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Enclosure (8)

STATEMENT OF CDR (b) (6) USN

I was at the pistol range, in charge of a firing party, on the morning of the A4D crash. I ~~finally~~ noticed the low and slow flying jet when it was approximately at 300 feet altitude and about at the one o'clock position. It was apparent, immediately, to me that he would never make the field. The plane was in a nose-up attitude, slow (100-110 kts) and descending rapidly at an angle of 40° to 45°. My reference line for the estimate was the top horizon of the pistol butts. I would estimate the aircraft to have been at a distance of 200 yds, and flying perpendicular to the axis of the pistol range.

I exclaimed that he was not going to make it and started running to the left in order to get around the end of the butts. Before reaching the end of the butts, I heard the crash and as the area came into my view, I saw spray, debris, and the rapidly settling tail section of the A4D. Two objects were observed flying forward. One appeared to be the canopy which sank immediately. The other was a small, dark, tank like object, which remained afloat, ahead and to the right of the crash.

While I was running along the outside of the pistol butts, a helicopter passed low overhead and discharged a man into the water. He could be seen examining different pieces of debris. Within a minute, another helicopter (Marine) discharged a man into the same area. A few minutes later a seaplane taxied into the slick and cut its engines. Later the men in the water were observed boarding the plane. After a few more minutes, a small boat from the Flight Test basin entered the area and about ten minutes after the crash, the crash boat came from the Solomon side. (b) (6)

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MEDICAL OFFICERS REPORT OF AIRCRAFT ACCIDENTS/INCIDENTS AND GROUND ACCIDENTS

OPNAV FORM 3750-8 (REV. 2-54)
(SUPERSEDES OPNAV FORM 3750-22)

OPNAV REPORT 3750-7

GENERAL INSTRUCTIONS

1. This report shall be filed in the event of an aircraft accident/incident which involves one or more of the following:
   - Death
   - Injury,
   - Bail-out or Ejection *(attempted or successful)*
   - Wherever physiological or psychological factors are involved
   - Aircraft Ground Accidents resulting in serious injury
   - Ditching
   - Water Crash
2. Completion of the form shall be the responsibility of the flight surgeon
3. For type accident and damage code refer to OPNAV INSTRUCTION 3750.6A.
4. This form shall be prepared in quadruplicate. One copy shall be turned over to the Aircraft Accident Board *(or the Survival and Intelligence Officer in the case of combat incidents)*, and the original shall be air mailed *(regular mail within 250 miles of Washington, D.C.)* direct to Chief of Naval Operations *(OP-57)* Navy Department, Washington 25, D.C. within 4 working days following the accident. The third copy shall be mailed direct to Safety Equipment Branch, BUAER, Navy Department, Washington 25, D.C. The fourth copy shall be forwarded direct via air mail *(regular mail within 250 miles of Norfolk, Va.)* to the U.S. Naval Aviation Safety Activity, Naval Air Station, Norfolk 11, Virginia. Where more than one aircraft is involved, separate forms must be completed for each aircraft wherein one or more of the requirements in paragraph 1. above are applicable. *(Additional copies may be prepared for use of squadron flight surgeons and other interested individuals)*

1. FROM *(Ship or station address)*	2. REFERRED	3. ACCIDENT OCCURRED *(Geographic location)*	4. TIME *(Local)*	5. DATE
NavAirTestCen, PaxRivMd.	9-56	N.A.S., Patuxent River, Md.	1000	8-13-56

6. PLANE COVERED BY THIS REPORT	MODEL	BU. NO.	NO. OCCUPANTS	UNIT OPERATING AIRCRAFT	TYPE ACCIDENT	DAMAGE
	A4D-1	137816	1	Flight Test Division, NATC	B-4	A
7. OTHER PLANE *(if involved)*	--	--	--	--		-

8. NAME OF PILOT IN CONTROL OF AIRCRAFT AT TIME OF ACCIDENT/INCIDENT *(Last, first, middle)*: LONG, John Oglesby, Jr.

UNIT PILOT ATTACHED TO: Flight Test Div., NATC

9. FLIGHT SURGEONS CHECK LIST: ☐ ALL PARTS OF FORM COMPLETED ☐ SURVIVORS NARRATIVES ☐ PHOTOS AS NEEDED ☑ RECOMMENDATIONS ☐ COPIES FURNISHED

10. REPORT FILED BY: (b) (6) [redacted] CDR MC USN — SIGNATURE — DATE: 8-21-56

11. FORWARDED: C. H. DUERFELDT, RADM COMMANDING — SIGNATURE — AUG 21 1956

12. ☒ AIRCRAFT ACCIDENT ☐ AIRCRAFT INCIDENT ☐ COMBAT INCIDENT ☐ GROUND ACCIDENT

13. ACCIDENT DESCRIPTION

INCLUDE HERE A PARAGRAPH GIVING A BRIEF BUT FACTUAL ACCOUNT DESCRIBING THE ACCIDENT/INCIDENT. INCLUDE SUCH CAUSES AS KNOWN, ESTIMATES OF "G" FORCES, ANGLES OF IMPACT, SPEED ON IMPACT, ATTITUDE ON IMPACT, ETC. ATTACH PHOTOGRAPHS WHEN PERTINENT.

See attached report.

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14. PILOT FACTORS *(Check pertinent pilot factors listed below)*

	PILOT	CO-PILOT		PILOT	CO-PILOT
IN CONTROL AT TIME OF ACCIDENT/INCIDENT	X		HYPOXIA SUSPECTED	No	
AMOUNT OF FLIGHT TIME IN LAST 24 HOURS	0		CARBON MONOXIDE POISONING SUSPECTED	No	
NUMBER OF FLIGHTS IN LAST 24 HOURS	0		FAULTY VISION	No	
NUMBER HOURS DUTY IN LAST 24 HOURS	1.5		AEROEMBOLISM	No	
HOURS SINCE LAST FULL MEAL	2.5		BLACKOUT, GREYOUT, REDOUT	No	
TIME AT CONTROLS THIS FLIGHT	30 min		VERTIGO	No	
TOTAL FLIGHT TIME	4592.5		NIGHT BLINDNESS	No	
TOTAL FLIGHT TIME IN MODEL *	21.9		FATIGUE	No	
NUMBER PREVIOUS ACCIDENTS	1		DOMESTIC DIFFICULTIES	No	
DATE OF LAST ACCIDENT	5-11-55		UNFAMILIARITY IN TYPE AIRCRAFT	Yes	
NUMBER DAYS GROUNDED IN LAST MONTH	0		ANXIETY REACTION	No	
DATE LAST LOW PRESSURE INDOCTRINATION	2-4-54		LAST CER *(date and score)* 11-8-55	+ 17	
AMOUNT SLEEP IN LAST 24 HOURS	Approx. 8		OTHER PERTINENT FACTORS IN ACCIDENT *(describe below)*		

15. COMMENTS ON ITEMS CHECKED UNDER ITEM 14 WHICH ARE PERTINENT TO ACCIDENT/INCIDENT. WHERE APPLICABLE, COMMENT BELOW ON ANY OF THE ABOVE FACTORS AFFECTING CREW MEMBERS OR PASSENGERS

* Pilot had received a complete cockpit check out in emergency procedures on 10 Aug 1956.

16. INCLUDE SURVIVORS NARRATIVES: None

SUMMARIES OF SAFETY EQUIPMENT, INJURIES AND CAUSE

DIRECTIONS

1. Use separate form for each person.
2. Under Injury Class, use following key:

Class "A" Fatal injury, is considered for reporting procedure as one that results in death prior to submission of the Aircraft Accident Report.
Class "B" Critical injury is considered for reporting procedure as injury which threatens to result in death either from injuries sustained in the accident or from complications thereof. Critical injuries resulting in death within 30 days shall be reported by letter to the original addressees.
Class "C" Serious injury is considered for reporting procedure as injury less than critical but definitely requiring five or more days hospitalization involving medical treatment but from which the individual will be expected to recover. Unsuspected critical conditions or complications erroneously listed in this category which result in death within 30 days shall be reported by letter to the original addressees.
Class "D" Minor injury is considered for reporting procedure as any injury less than serious.
Class "E" No injury.
Class "L" Unknown injury - lost and presumed drowned
Class "M" Unknown injury - missing

3. Under disposition, use following key
"E" - Uninjured
"G" - grounded
"H" - treated and returned to duty
"X" - hospitalized
"Y" - remains recovered
"Z" - remains not recovered

1. NAME		3. RANK/RATE	4. AGE	5. WEIGHT	6. HEIGHT
LONG, John Oglesby, Jr.	(b) (6)	LT	34	155	68"

7. DUTY ABOARD PLANE, ON DECK/GROUND	8. POSITION OCCUPIED AT TIME OF ACCIDENT	9. INJURY CLASS	10. DISPOSITION
Pilot	Cockpit	A	Y

11. SAFETY EQUIPMENT	MODEL/TYPE	AVAILABLE	USED	NOT USED	DAMAGED	LOST
SHOULDER HARNESS	A-4D-1	X	X		X	
LAP BELT	A-4D-1	X	X			
INERTIA REEL	Integrated	X	X			
"G" SUIT	Torso Harness	X	X		X	
HELMET	APH-5	X	X		X	X
OXYGEN MASK	A-13A	X	X		X	X
GOGGLES						
SHOES (type)	Field	X	X			
FLIGHT SUIT, OTHER THAN "G" (type)	Summer	X	X		X	
EXPOSURE SUIT (type)						
OTHER (specify)	Life Preserver MK3B	X		X		

WAS OXYGEN BEING USED AT TIME OF ACCIDENT: [X] YES [ ] NO
PREOXYGENATION: [ ] YES [X] NO
IF YES, OXYGEN SUPPLY PRESSURE PRIOR TO FLIGHT 1800 PSI
AT TIME OF ACCIDENT ? PSI
WAS OXYGEN EQUIPMENT PRE-FLIGHTED BY PILOT: [X] YES [ ] NO

IF SHOULDER HARNESS USED	LOCKED	UNLOCKED	TIGHT	SLACK
	X		X	

[X] PRESSED FORWARD AGAINST HARNESS [ ] PRESSED AGAINST SEAT BACK

ON IMPACT	SAFETY BELT	LOCKED	TIGHT	SLACK
		X	X	

12. COMMENT ON EFFECTIVENESS (Entries of "No," "None," "as designed," etc., will not be accepted. If any equipment failed, describe failure and probable cause). Use additional sheet, if necessary. See attached sheet.

IN CASE OF BURNS, FREEZING, OR FROSTBITE, LIST ALL CLOTHING WORN. USE ADDITIONAL SHEET, IF NECESSARY.

13. POST CRASH EXAMINATION

IF DEAD, LIST PRIMARY CAUSE (multiple extreme, as state): Drowning
INTERNAL INJURIES: ?
AUTOPSY FINDINGS, IF PERFORMED: Supplemental report to follow.
IF HOSPITALIZED, GIVE DIAGNOSIS:
PLACE:
ESTIMATED LENGTH OF HOSPITALIZATION:
LIST PRE-EXISTING PHYSICAL DEFECTS PRESENT AT TIME OF POST CRASH EXAMINATION (as condition permits): None known.
CARBON MONOXIDE-NAME COHB TEST-RESULTS: Not received this date
IF GROUNDED, REASON:
ESTIMATED LENGTH OF GROUNDING:

14. INJURIES

Chemical [ ] FROSTBITE

DEGREE	1ST	2ND	3RD	1ST	2ND	3RD	1ST	2ND	3RD	CARBONIZATION ENTIRE BODY
			X			X			X	

AREA	HEAD (ventral)	(dorsal)	TRUNK (ventral)	(dorsal)	EXTREMITIES (upper)	(lower)
	X	X	Slight		X	X

UNCONSCIOUSNESS: [X] SHORT DURATION-LITTLE SIGNIFICANCE [ ] OTHER (time) Unknown, but highly probable.

HEAD INJURIES: CEREBRAL CONCUSSION [ ] MINOR [X] SERIOUS [ ] CRITICAL [ ] FATAL
MINOR FACIAL INJURIES: Contusions and Lacerations
MAJOR FACIAL INJURIES:
MINOR EYE INJURIES: [ ] RIGHT EYE [ ] LEFT EYE
MAJOR EYE INJURIES: [ ] RIGHT EYE [ ] LEFT EYE

TYPE / BONES	SKULL CRANIAL	SKULL FACIAL	VERTEBRAE (specify no.) CERV.	THOR.	LUMBAR	SACRAL	COCCYX	SHOULDER GIRDLE	RIBS	PELVIS	UPPER ARM L	UPPER ARM R	LOWER ARM L	LOWER ARM R	HAND L	HAND R	UPPER LEG L	UPPER LEG R	LOWER LEG L	LOWER LEG R	FOOT L	FOOT R
SIMPLE FRACTURE																						
COMPOUND FRACTURE																						
Compressed FRACTURE				T-8 T-9																		
DIS-LO-CA-TION		JAW									SHOULDER		ELBOW		WRIST / HAND		HIP		KNEE		ANKLE / FOOT	

AMPUTATIONS - STATE PARTS

AREA OF INVOLVEMENT		LACERATIONS MILD	LACERATIONS MODERATE	LACERATIONS SEVERE	CONTUSION/SPRAIN/STRAIN MILD	CONTUSION/SPRAIN/STRAIN MODERATE	CONTUSION/SPRAIN/STRAIN SEVERE	ABRASIONS MILD	ABRASIONS MODERATE	ABRASIONS SEVERE
HEAD	VENTRAL		X		X			X		
	DORSAL									
NECK										
THORAX	VENTRAL				X					
	DORSAL									
ABDOMEN	VENTRAL					X				
	DORSAL									
EXTREMITIES (upper)			X				X		X	
EXTREMITIES (lower)			X				X		X	

[X] DROWNED

SHOCK	EXPOSURE
[ ] MILD	[ ] MILD
[ ] MODERATE	[ ] MODERATE
[ ] SEVERE	[ ] SEVERE

15. CAUSE OF INJURIES (Give opinion as to cause of each injury indicated above. Give specific parts of aircraft involved. Entries of "No," "None," "Sustained on impact," or "Undetermined" with no explanation will not be accepted. Use additional sheet, if necessary.)

See attached sheet.

Enclosure (10)

OPNAV FORM-3750-8 (REV. 2-54)

UNIT NavAirTestCent
DATE ACCIDENT 8-13-56
MODEL A4D-1
BU. NO. 137816

DITCHING AND WATER CRASH REPORT

☐ 1. CONTROLLED DITCHING ☒ 2. WATER CRASH

3. WEATHER — SEA: ☒ SLIGHT ☐ MODERATE ☐ ROUGH — WIND VELOCITY (Knots) (air temp °F) (water temp °F): SE 4 + 80 + 70

4. PROCEDURES

CANOPY		POWER		DITCHED	
☐	JETTISONED		ON ☐ OFF ?		INTO WIND
☐	OPEN	WHEELS	UP ☐ DOWN ☒	☐	DOWN WIND
☒	CLOSED	FLAPS	UP ☐ PARTIAL ☐ FULL ☒	☒	CROSS WIND

5. IMPACT (Estimated)

ATTITUDE	ANGLE	SPEED (Knots indicated)	STOPPING DISTANCE (ft.)	NO. OF IMPACTS	TIME A/C FLOATED (Secs.)
Nose Up	Approx. 45°	?	?	Two	Sank immed.

6. EXIT

	NAME	BILLET	UNDERWATER	PLACE OF EXIT	DIFFICULTIES
A.	LONG, John Oglesby, Jr.	PILOT	No	None	Denote below under: A, B, C, and D
B.					
C.					
D.					

A. Pilot was still in cockpit with Lap Belt and Shoulder Harness partially detached. Right foot moderately entangled in wreckage. Death due to drowning.

B.

C.

D.

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7. SURVIVAL EQUIPMENT

	SHOES		GLOVES		LIFE VEST		EXPOSURE SUIT		RAFT		USED TO ATTRACT ATTENTION					
	TYPE	DAMAGED	TYPE	DAMAGED	TYPE	DAMAGED	TYPE	DAMAGED	TYPE	DAMAGED	DYE	FLARES	FLASHLIGHT	MIRROR	GUN	RADIO
A	Field	No			MK 3B	No			Not Used		No	No	No	No	No	No
B																
C																
D																

8. LIST CAUSE OF DAMAGE, IF ANY, TO SURVIVAL EQUIPMENT (include photo of damage) (use additional sheet, if necessary)

No damage to survival equipment - None used

9. LIST ANY DIFFICULTIES OR FAILURES IN USE OF SURVIVAL GEAR (use additional sheet, if necessary)

Failure to use probably due to unconsciousness and drowning.

10. TIME IN RAFT: Not used — TIME IN WATER: 1½ hours — METHOD OF RESCUE: Remains removed by divers.

11. LIST EQUIPMENT DROPPED TO SURVIVORS: STATE IF USED EFFECTIVELY (use additional sheet, if necessary)

None

12. LIFT ALL ITEMS IN SURVIVAL KIT WHICH WERE USED - EFFECTIVENESS (List those needed items which failed or were lost - Recommendations) (Use additional sheet, if necessary)

None used

13. INCLUDE SURVIVORS NARRATIVES None

NATC - MEDICAL OFFICER'S REPORT, SERIAL 9-56 ON A4D-1, 137816

LT John O. LONG, Jr., (b) (6) U. S. Navy, left the flight line at 0930 and was airborne at approximately at 0935. Take-off was normal and no radio transmissions were received prior to his call for a break over duty runway at about 0955. His call for the break was routine and no mention of emergencies or malfunctions was made. The break was observed to be normal and wheels and flaps were extended preparatory to landing on runway 9. During the down-wind leg, he was observed to develop a high rate of sink with the aircraft in a level attitude. On turning base the rate of sink continued and was estimated to be about 40° to 45°. The aircraft was observed to strike the water in a nose high attitude, nose over, and break up on impact. The wreckage sank immediately. One helicopter pilot nearby proceeded immediately to the site of the crash and observed a helmet and what appeared to be a parachute come to the surface almost at once, however, the pilot failed to appear.

Divers located the wreckage about one hour later and the pilot was found in the cockpit area still attached to the seat by shoulder strap and lap belt attachment. The pilot's right foot and leg were entangled in the wreckage, but were easily freed by the diver, the left lap belt attachment was open. Post mortem examination revealed death to be due to drowning.

Examination of the wreckage revealed the following:

a. Failure of left shoulder harness attachment. Linkage had pulled free from the attachment to the inertia reel cable.

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b. Failure of entire bottom of seat.

c. Possible failure of left-belt rocket fitting. This fitting was found by divers to be in the open position. It might have occurred during crash or have been opened by the pilot. The latter is extremely doubtful.

d. The visor and visor shell of the APH-5 helmet had been wiped off on impact. The chin strap had failed at the left attachment; otherwise, the helmet was intact.

e. Though the oxygen mask yoke suspension remained attached to the helmet, the A13-A oxygen mask was missing.

f. Oxygen mask and hose were separated.

(b) (5)

(b) (5) [redacted]

Supplemental reports will be submitted.

(b) (6) [redacted]
CDR MC USN

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Enclosure (10

STATEMENT OF MAJ (b) (6) [redacted] PERTAINING TO CRASH OF
A4D-1, BUNO 137816
on 13 AUG 1956

1. At 1600 on 13 Aug 1956 I examined the left and right cockpit consoles of A4D-1, BuNo 137816. The following was noted:

a. The throttle was in the cutoff position.

b. Wing fuel pump transfer switch was off.

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c. External fuel tank pressurization was on.

2. The throttle friction wheel in 816 provided no friction when the wheel was rotated aft. A peculiarity of this throttle quadrant was a tendency toward throttle stickiness when the friction wheel was set for about average throttle friction. As a result I flew this airplane with somewhat less throttle friction set than I did on other airplanes. Also, there was no lip on the idle stop which made it quite possible for the throttle to slip off the idle stop and on around to the cut-off position if throttle aft motion was fast and positive. While this never happened to me, I have been able to simulate it in another A4D-1 with average throttle friction cranked in.

3. In 816 there is a red cover-guarded wing fuel pump on-off switch installed to permit attaining an artificial or emergency c.g. condition for test purposes. It is necessary to lift the cover guard and throw the toggle switch forward to shut off wing fuel transfer. This switch is located on the starboard console at the extreme aft end-well out of a pilot's normal field of vision. The pilot is reminded by two separate sources when the pumps have failed or the switch is off. They are:

a. The marker beacon red light is also wired to the pump and would burn steadily.

b. The fuel quantity guage would read fuselage fuel only when fuselage fuel was down to 1100 lb.

In the event of failure of the wing fuel transfer pump in an A4D-1 airplane the only usable fuel is the approximately 1700 lb of fuselage tank fuel. If the marker beacon light has burned out, the pilot is unaware of the failure until the fuel guage unwinds to 1100 lb.

Enclosure (11)

4. External tank fuel transfer is effected by flipping the fuel tank pressurization switch to on. The external tanks are then pressurized by engine bleed air and the fuel transfers to the wing tank. If the wing transfer pump is off or has failed, external tank fuel will continue to transfer to the wing until the wing is full at which time engine air is then vented overboard. Leaving the pressurization switch on when the wing fuel transfer pump has failed or when all external fuel has been transferred results simply in wasting engine power.

5. LT Long received two cockpit checkouts from me. The first was last winter and the second was Monday, 6 August 1956.

(b) (6) [redacted]

MAJ, USMC

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TO WHOM IT MAY CONCERN:

At approximately 0900 EST 13 August 1956 while standing on the steps (adjacent to the parking area) of the NAS Operations building I saw a jet aircraft in a descent just prior to crashing in the water offshore from the approach end of runway 13. When I first observed this aircraft I would estimate its altitude to be approximately 100 feet. The aircraft was in a flat to slightly nose down (mushing) attitude with the gear extended. It was heading in a southwesterly to westerly direction. I did not see the aircraft when it made contact with the water as it disappeared behind the bluff to the approach end of runway 13.

(b) (6) [redacted]

LCDR USN

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Enclosure (12)

STATEMENT OF (b) (6) AN, USN

At 0925, LT Long came out to the plane, A4D BuNo 137816. He walked around it once then got in the cockpit. I helped strap him in and handed him his pilots handbook and oxygen mask which he set on the right console. We gave him a normal start and directed him out to the taxi-way. During taxi-out, I stopped LT Long because out fuel dripping. (b) (6) and a Douglas mechanic checked it and it was only coming out of the fuel vent.

(b) (5) Usually, he asked either myself or one of the Douglas mechanics how the plane was. That morning he did not. When LT Long walked around the plane, he didn't check his slats, flaps, etc., like he usually did. During turnup, LT Long always checked his dive brakes, elevators, etc. That morning he did not check anything. LT Long always came out fast when I taxied him out. That morning he crept out. Always before when I got LT Long on the taxi-way and gave him the thumbs up, he always returned it, that morning he only nodded.

(b) (6)

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Enclosure (13)

STATEMENT OF (b) (6) DOUGLAS MECHANIC

On August 13 at approximately 1000 I was walking in an easterly direction just opposite the Structure Shop at Flight Test when I happened to look toward the river and saw the A4D, which subsequently proved to be BuNo 137816, crash. My first impression was that the airplane was making a low altitude speed run because, when I first saw it, it was at an altitude of no more than 150-200 feet. The ship was descending at a very high rate and at an angle that I would say was between 30° and 45°. It was heading very close to due west. I think that the gear was up, but am not positive. I am almost certain that the airplane was under control in the two or three seconds that I saw it before it ditched. I could see the blue drop tanks fairly clearly so I am sure the wings were very close to level. The nose was in a slightly high attitude. There was considerable noise from the shops in my vicinity but I do not think the engine was running. I did not hear it. The ship disappeared behind some barges when about 15 feet off the water so I only saw the spray from its actual contact.

(b) (5)

(b) (6)

33

Enclosure (14)

21 August 1956

From: (b) (6) AO-1, IRB, Service Test
To: CDR (b) (6) Flight Test

Subj: A4D Crash, Observation of

1. While walking between hangars 110 and 111 I observed an aircraft disappear behind the barge toward the water and saw a splash approximately twenty feet above the barge in a northwest direction.

2. The moment of observation was so brief that I was unable to determine the type or attitude of the plane at the time of contact with the water. Jet aircraft were turning up in Flight Test parking area so I was unable to determine whether the engine was running or not at the time of the crash.

(b) (6)

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Enclosure (15)

STATEMENT OF (b) (6) AD3, USN

On the morning of 13 August 1956, I made a scheduled run to the small arms firing range. I parked the van in the parking area directly across the road from the firing range to wait for the men returning to hangar 305. At approximately 1005, while seated in the tractor, I observed an airplane approaching from about one o'clock. I can give no estimate of its altitude at that time. He appeared to be fish tailing badly and losing altitude rapidly. He seemed to have had power failure as his engine sounded as though it was turning over very slowly. It looked to me like he was heading in the general direction of my van. Since I preferred to be out of the way when the aircraft hit, I got out of the van and ran toward the water. The next time I looked up, the aircraft was over the water and falling nearly straight down. When it hit the water, it was in an extremely nose high attitude. Upon contact with the water, the aircraft flattened out on its underside and the nose plunged under. In about three seconds, the entire aircraft was submerged. Within twenty or thirty seconds, the rescue helicopter was at the scene.

(b) (6) AD3, USN

(b) (6)

AD3

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Enclosure (16)

16 August 1956

TO WHOM IT MAY CONCERN:

After checking runway lights, I was driving on the road near Langenfelder's pumphouse where barges are being unloaded, when I noticed a plane coming in flying low at approximately a 30 degree angle. The time was approximately 1000. I watched the plane because it was flying unusually low. To my knowledge, the plane's motor was not running. This occurred on Monday 13 August 1956.

The plane went into the water approximately 500 feet off of the pistol range. After hitting the water, the plane disappeared within one half a minute. The next thing I saw was what appeared to be a large spray of steam.

Mr. [redacted] states the wheels were down.

[redacted]

[redacted] Cable splicer

[redacted]

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PLATE 20

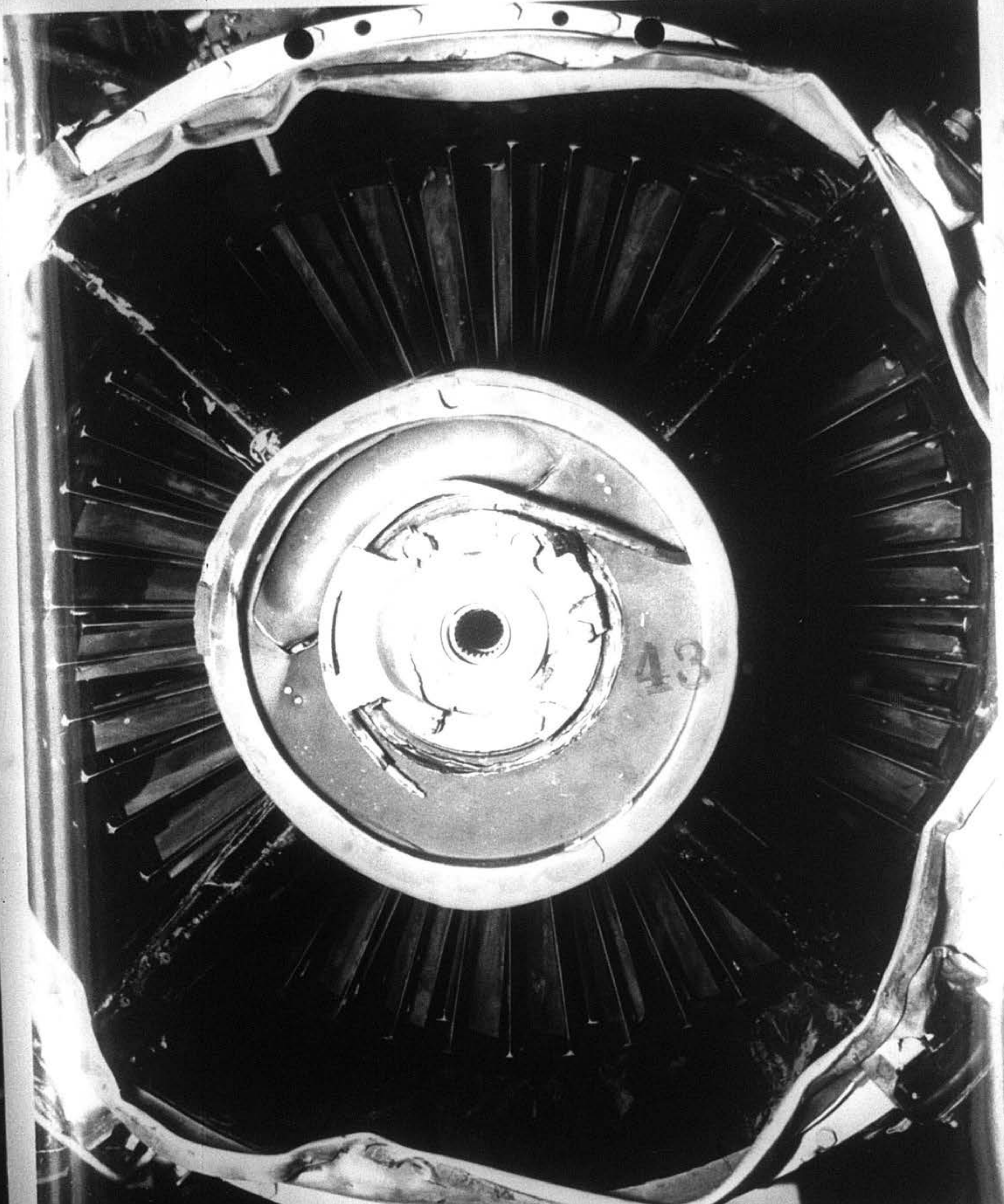
Enclosure (19)

NAVY

Enclosure (1).

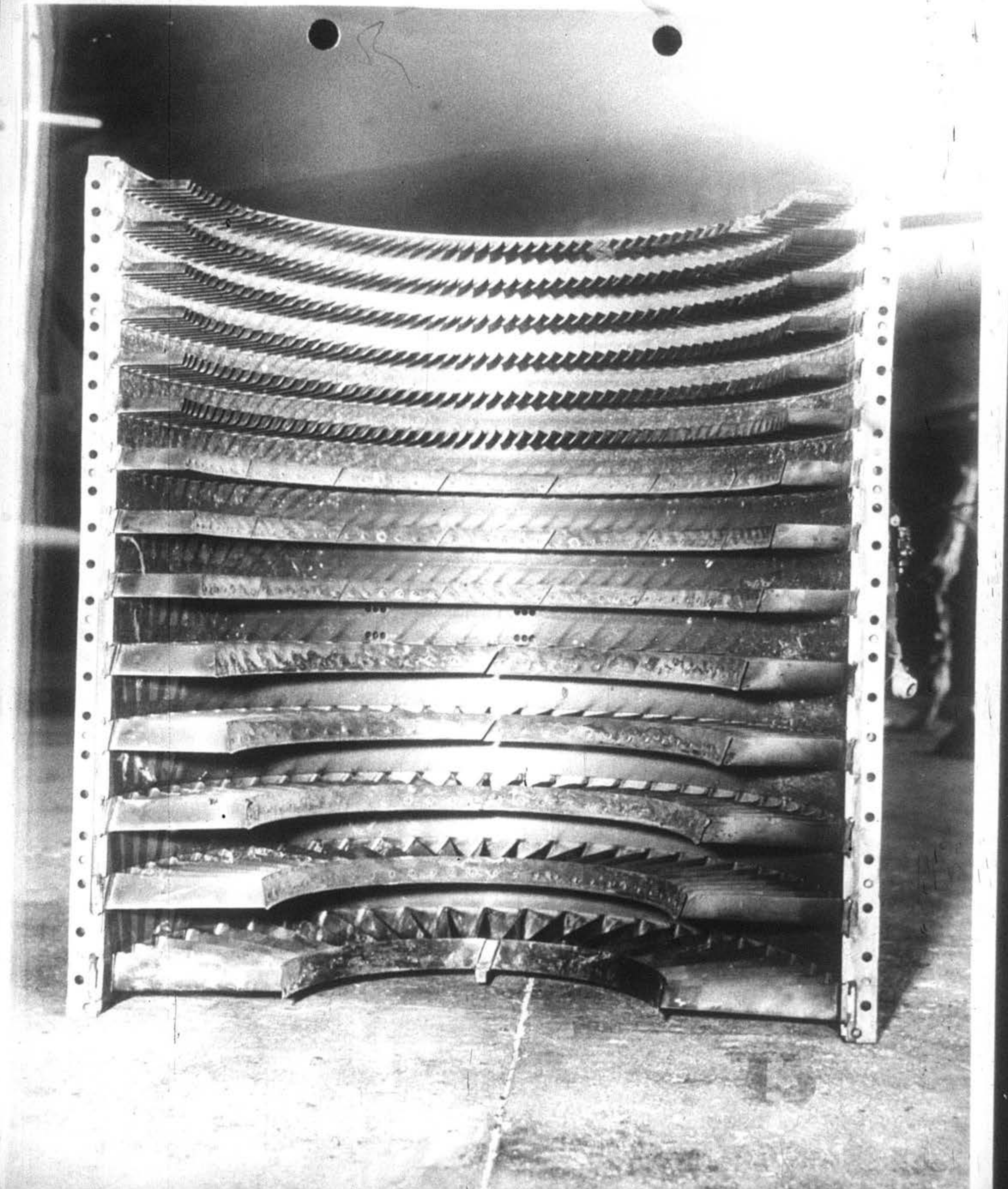
Enclosure (18), [illegible] 1

Enclosure (15), Pic. 5

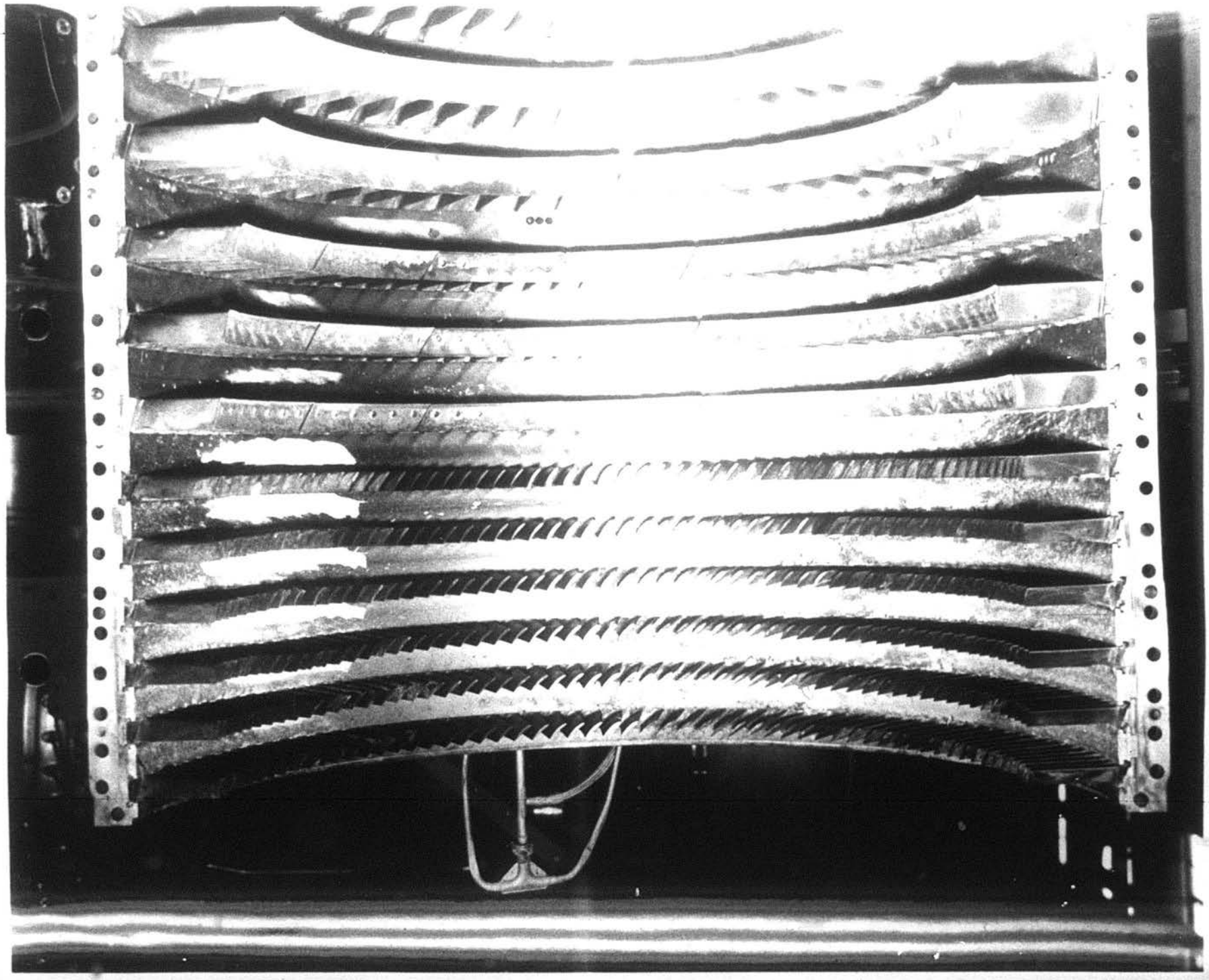


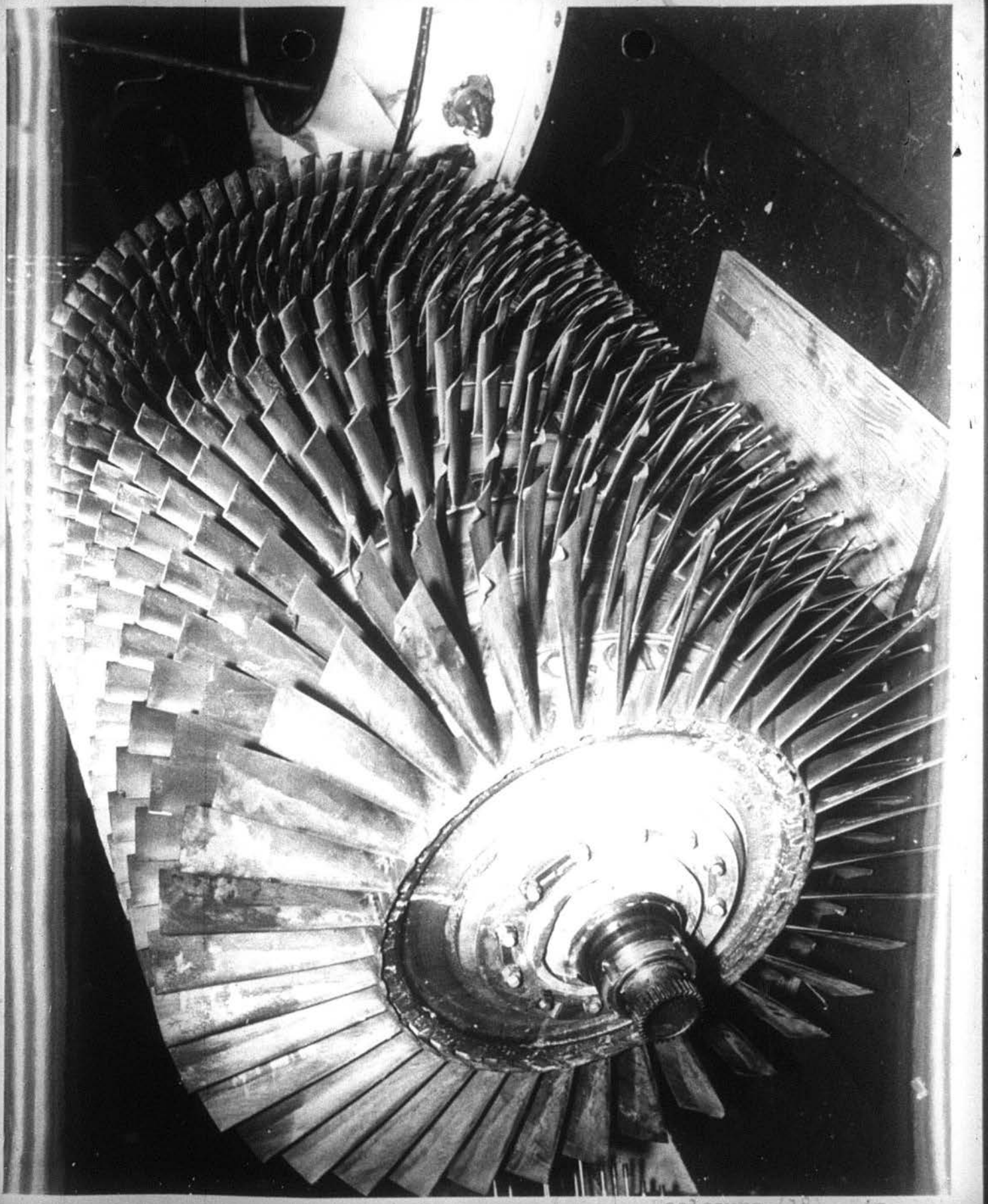
nclosure (10), Fig. [illegible]

41

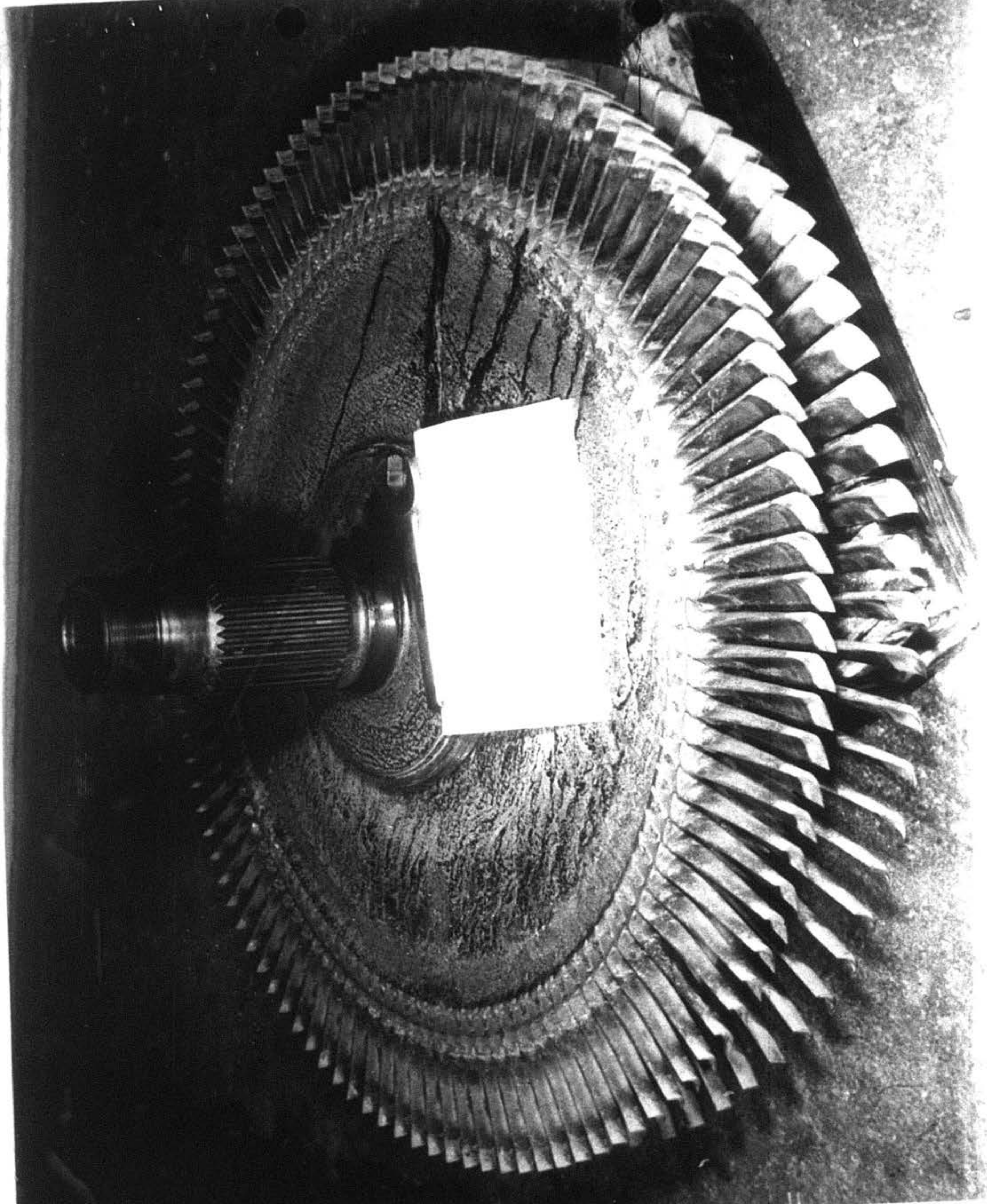


Enclos. [illegible] (b), Fig. 48





Enclosure (18). Mr.



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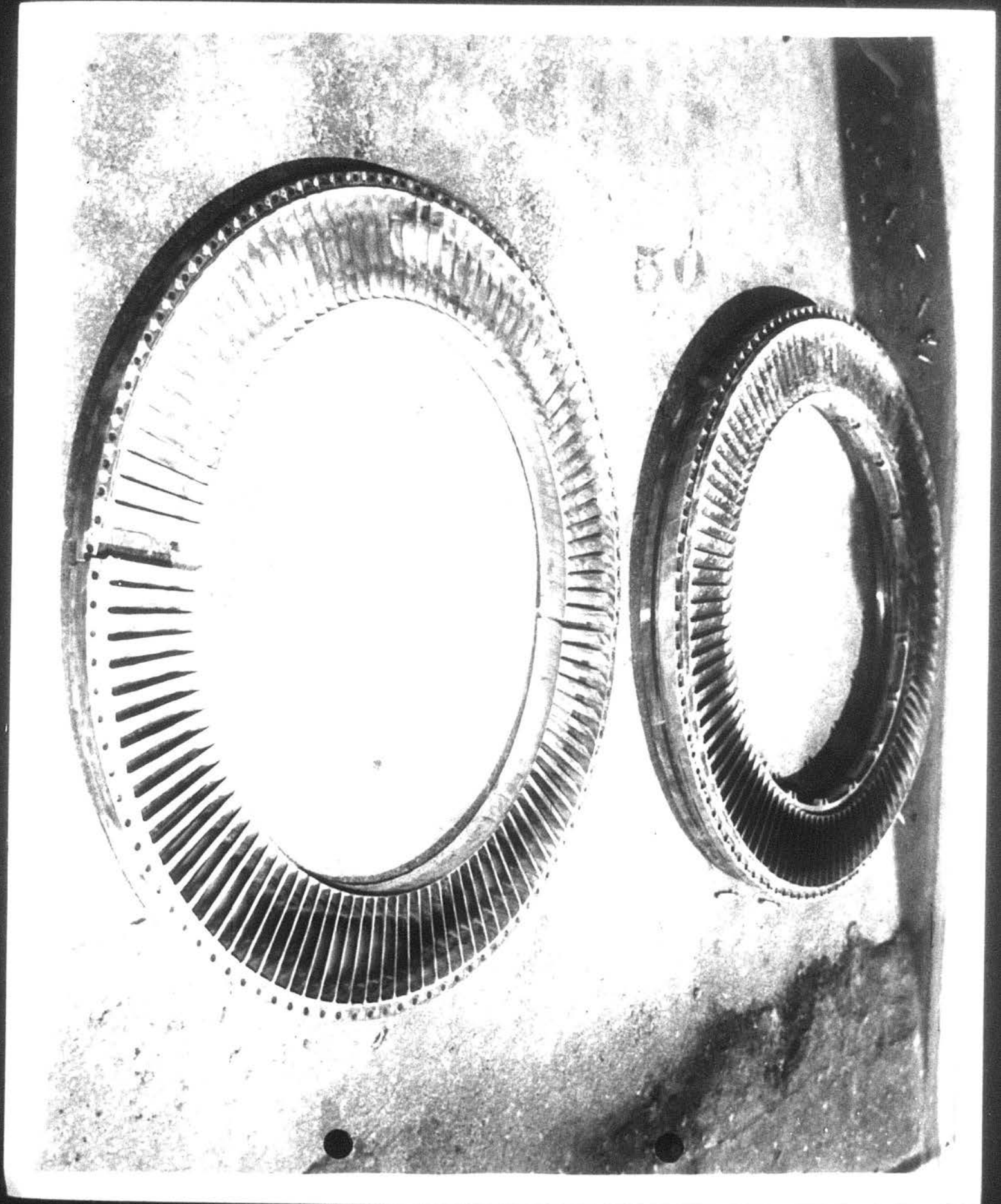
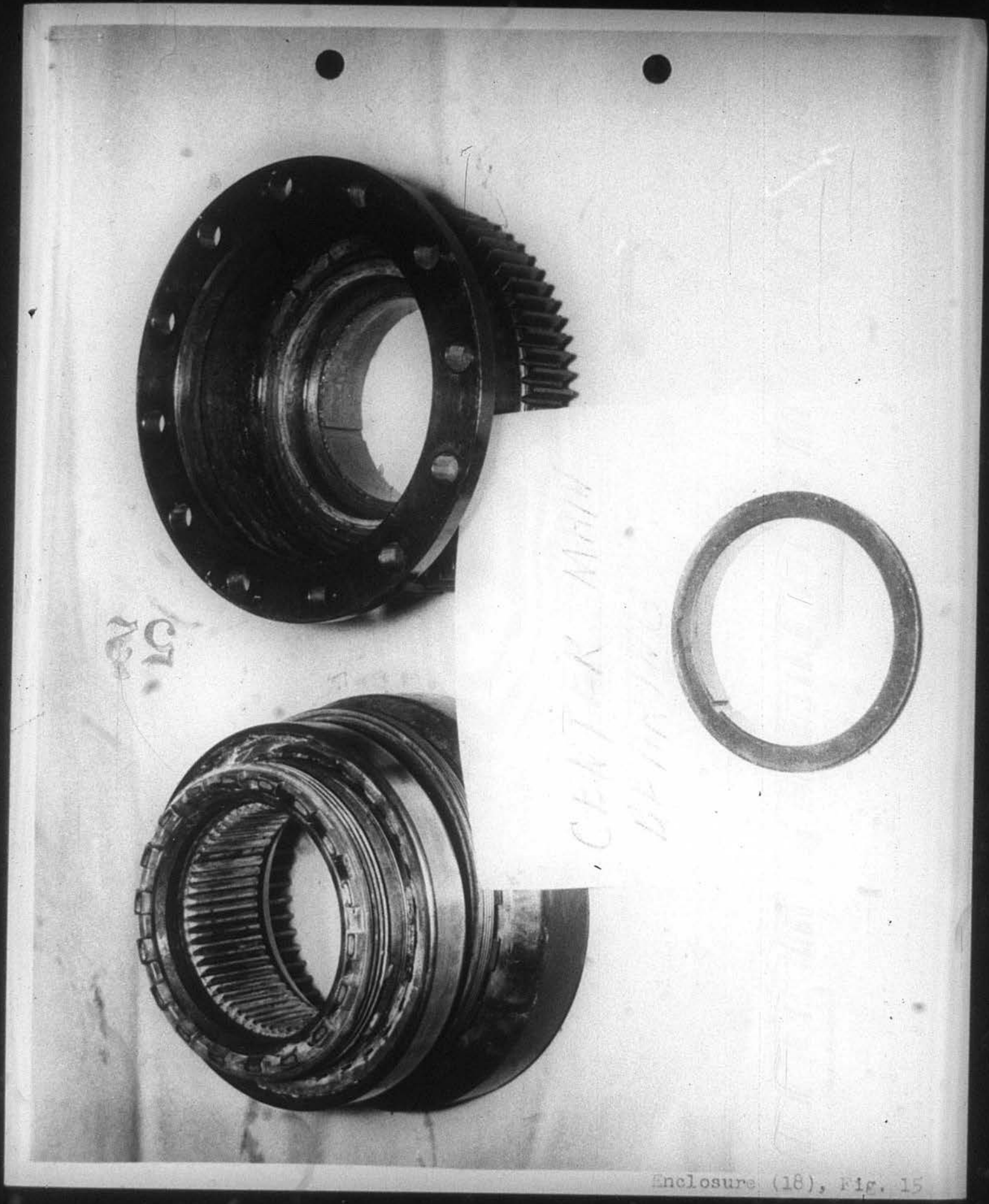


Enclosure (18), Fig. 1



Enclosure (18), Fig. 15

Enclosure (18), Fig. 15

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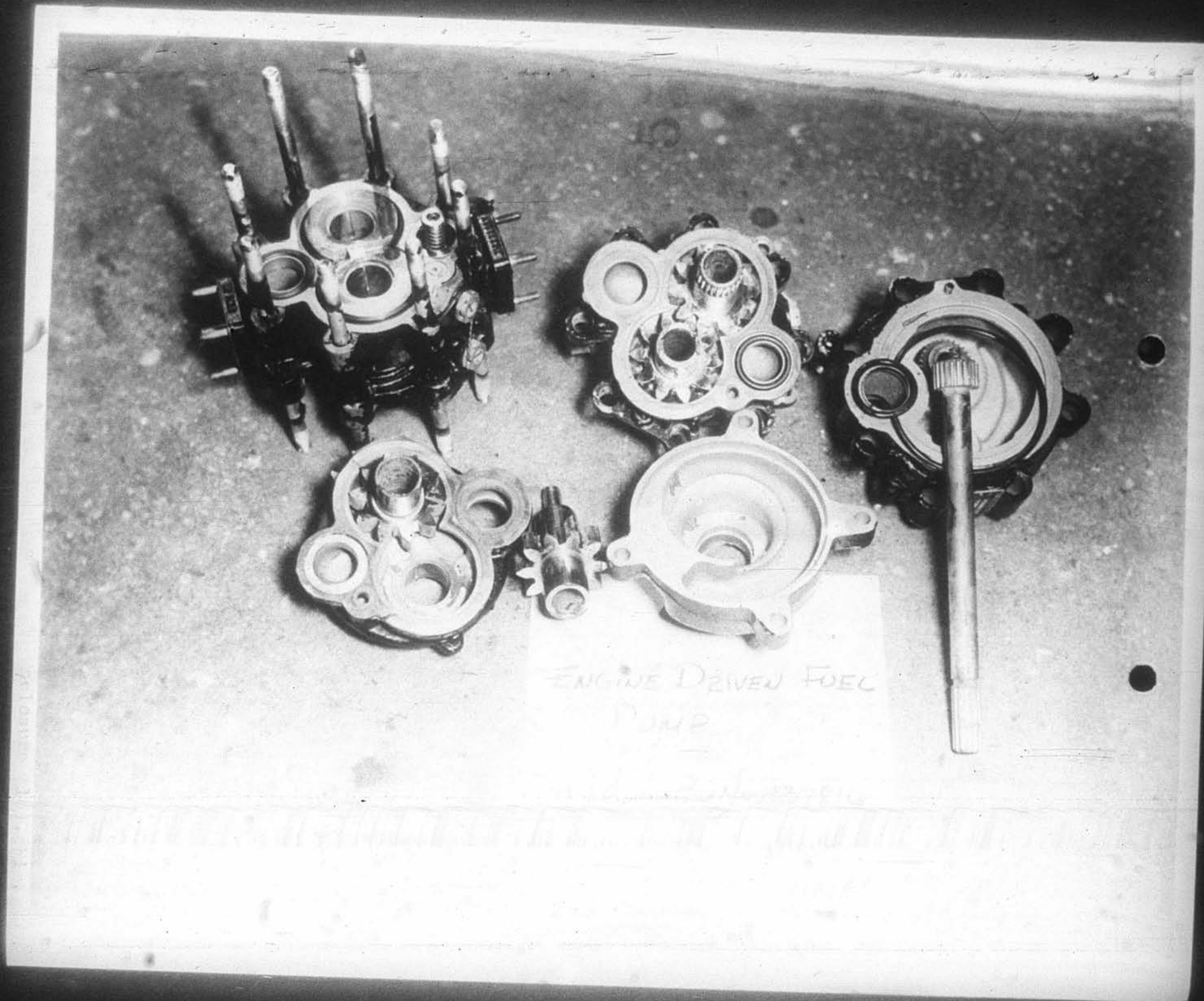
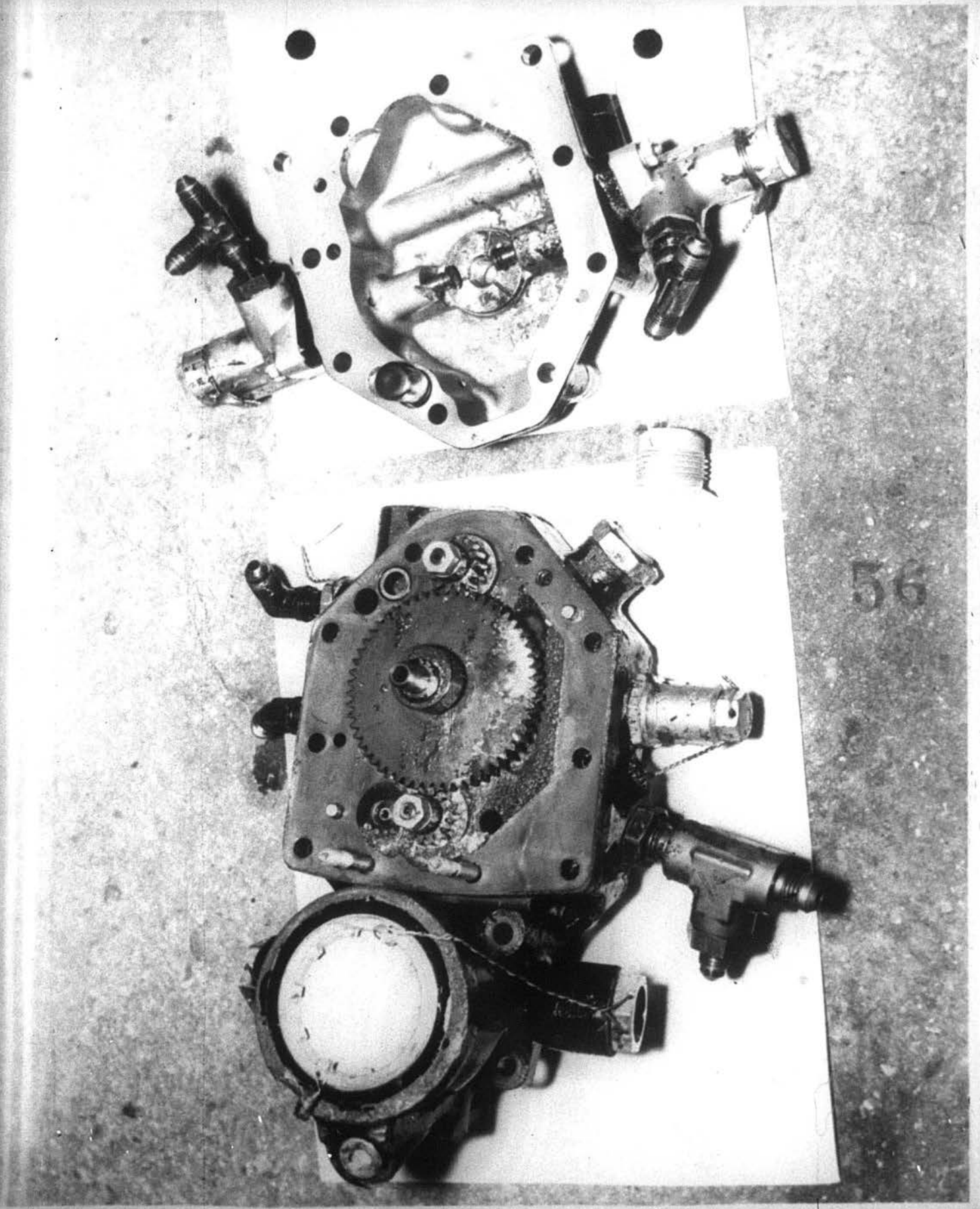
OIL SCAV PUMP SCREEN

A4D-1 BUNO 137816

PAX

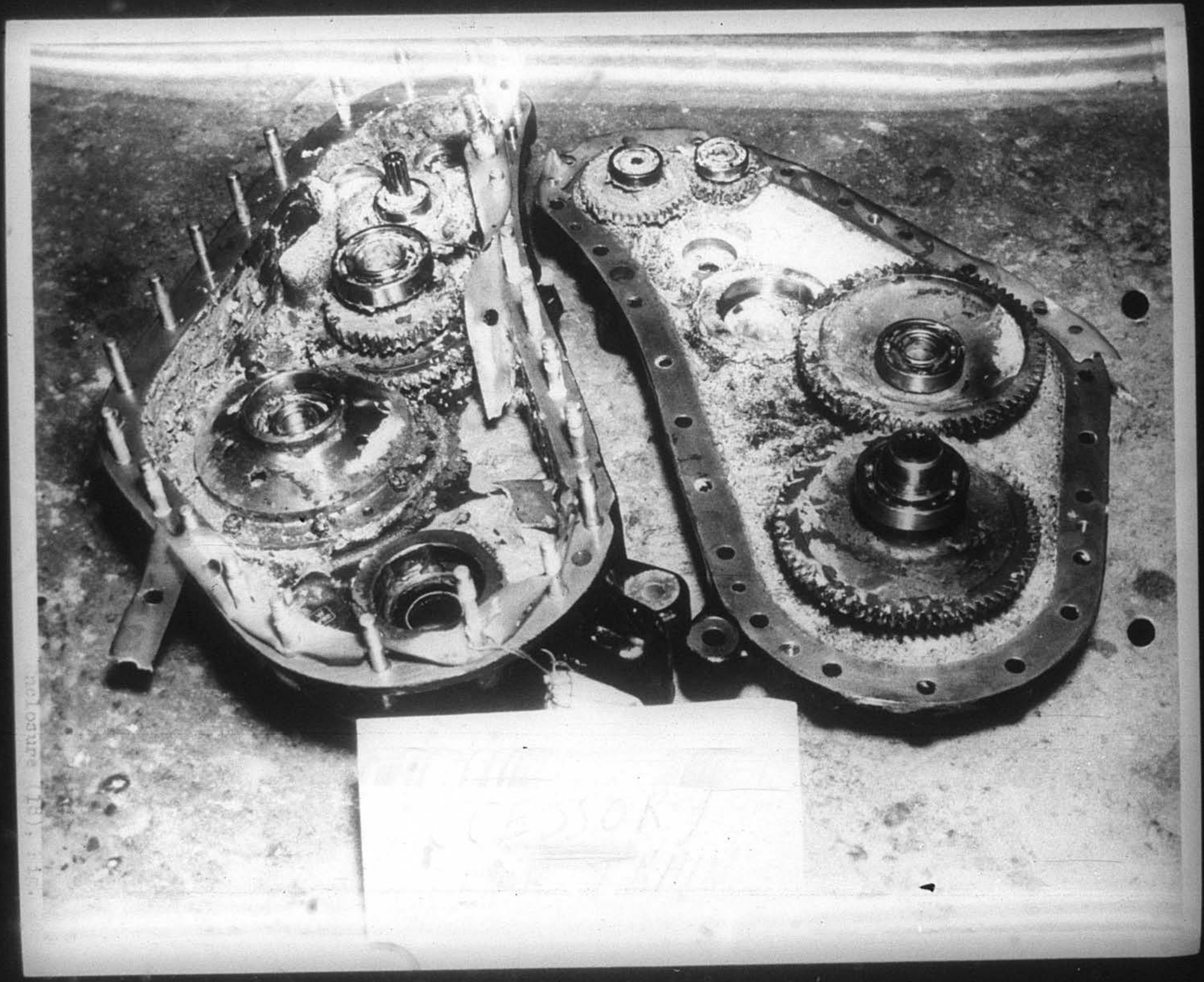
Enclosure (10), Ltr. 17

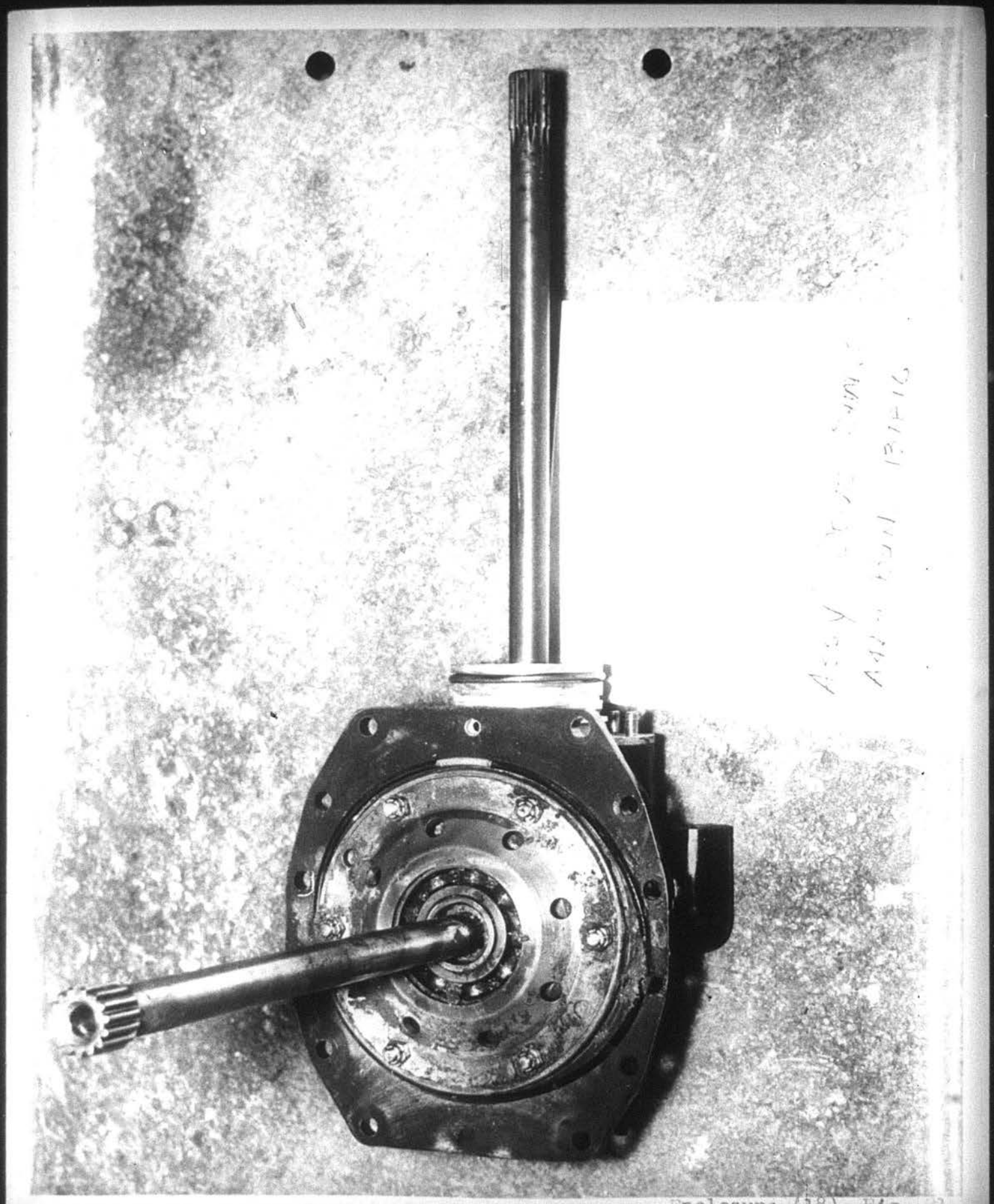

ENGINE DRIVEN FUEL
PUMP



56

Enclosure (18), Fig. 19





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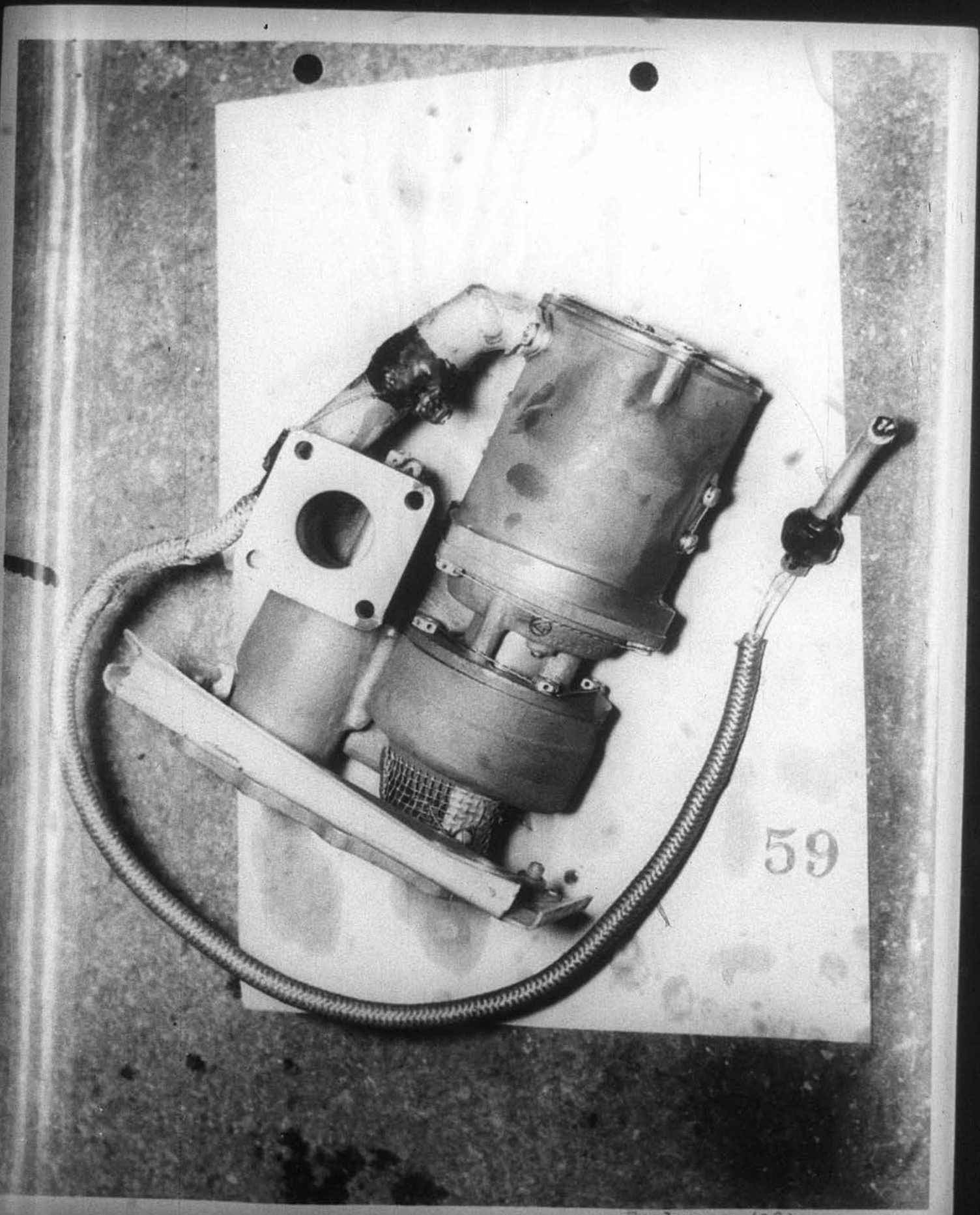

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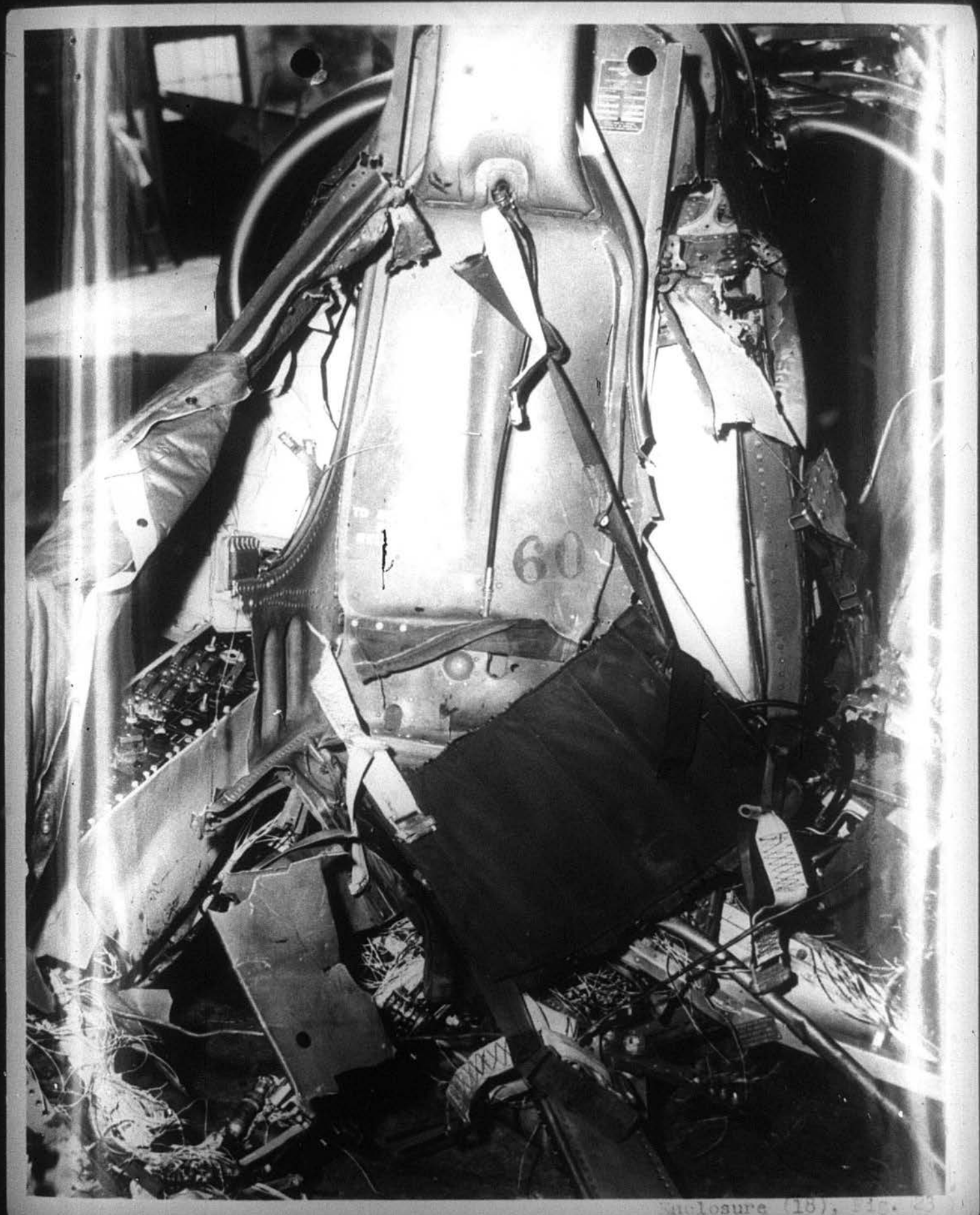
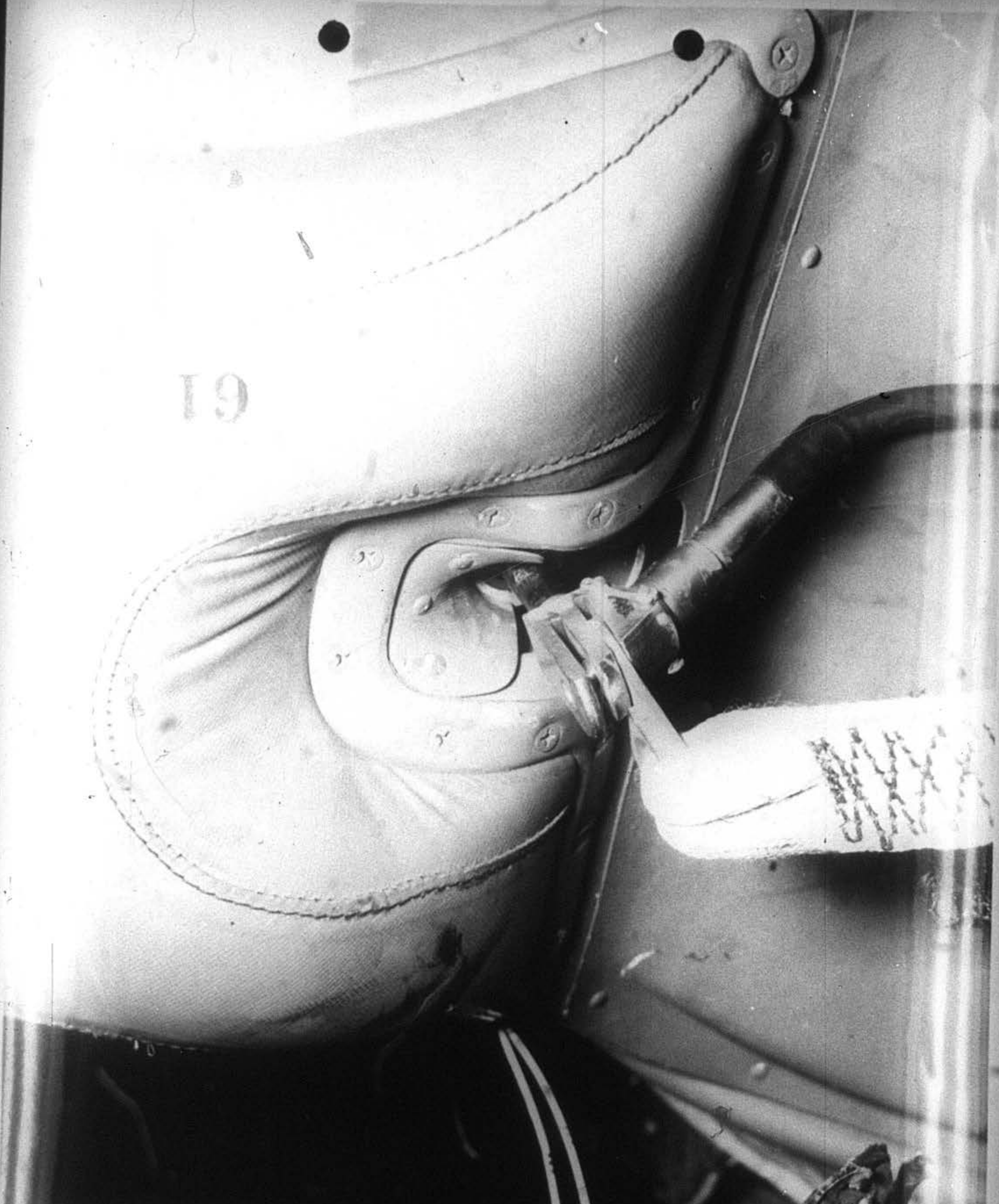
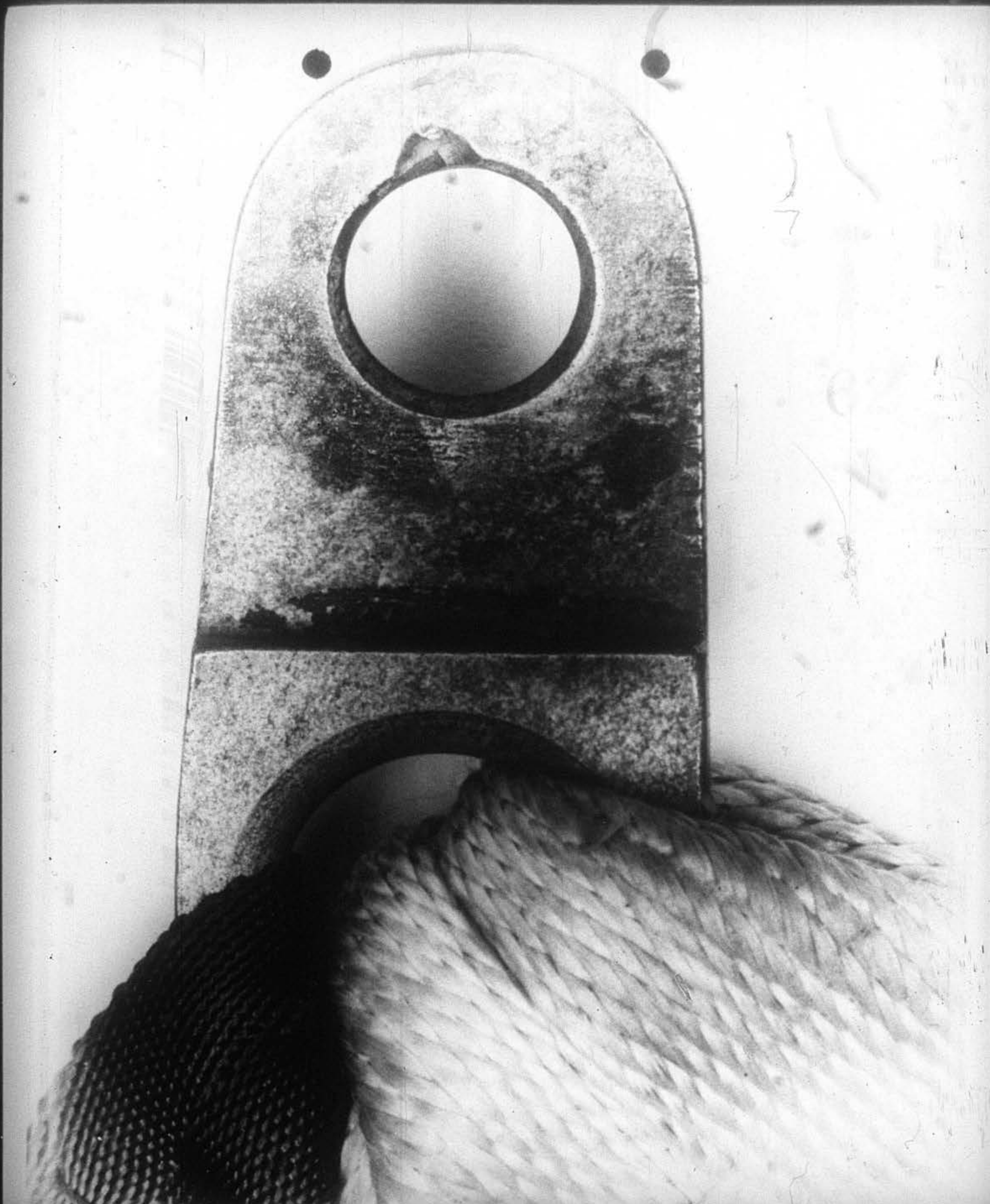


Enclosure (18), Fig. 5



nclosure (18), Fig. 2[illegible]



Enclosure (1[illegible]), Fig. [illegible]